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Work-related stress among occupational health nurse practitioners in Gauteng province

McAlinden, Stephanie Leila

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WORK-RELATED STRESS AMONG OCCUPATIONAL HEALTH NURSE PRACTITIONERS IN GAUTENG PROVINCE

Stephanie Leila McAlinden

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Nursing

Johannesburg

2022

DECLARATION

I, Stephanie Leila McAlinden, Student Number: 0609356t, declare that this research constitutes my own work. It is for submission for the Masters of Science in Nursing at the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg. This research has not been submitted before for any other degree or examination at this or at any other University.

Signed: 

Date: 4th day of August 2022

Ethical Clearance Number: M201193

DEDICATION

This Research Report is dedicated to:

Paula Helena McAlinden

Thank you, Mommy, for your ongoing, unconditional love, motivation, and support, you always believed in me, even when I didn't believe in myself. I love you.

&

Brenden Joseph McAlinden

Daddy, I miss you and I love you, may your kind-hearted soul Rest in Peace

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There are so many people that I owe my deepest gratitude. Without their instrumental help in this research report, this would never have been possible. I wish to express my most sincere and heart-warming thanks to:

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- To the South African Society of Occupational Health Nurses, thank you for allowing me to conduct this research,
- To the South African Society of Occupational Health Nurses' Chairpersons of Gauteng Central, West Rand, Vaal and Pretoria, thank you for helping me with data collection, If it weren't for your continued help, I would have never been able to complete this study.
- To the occupational health nurses who participated in this research study, I truly thank you for your honesty and willingness to help me. I only hope that the results will help you in your future practices.
- To my statistician, Brenda Kagodora, thank you for helping me with the interpretation of the data; you were always accessible and approachable.
- To my family, Alison and Duncan Coulter and Catherine McAlinden, thank you for your motivation and support.

ABSTRACT

Introduction: Occupational Health Nursing Practitioners (OHNPs) engage in a specialised field that examines the relationship between the workplace and employee health in order to promote, protect, and restore employee health. The expanded role of OHNPs includes health promotion and education that provides stress reduction and management. Work-related stress among nurses is a well-documented and researched growing crisis; nonetheless, the majority of prior research focused on nurses working in hospitals, either in specialised or acute units. Workplace stress is a negative physical and psychological reaction that occurs when there is a dispute between the range of work responsibilities provided to an employee or employer and the amount of control they are given to overcome a situation. Stress is hazardous to one's health; thus, OHNPs must be aware of their stressors and how to effectively manage them in the workplace; consequently, this study will focus on the sources and levels of stress in OHNPs as employees.

Methods: A self-administered online questionnaire with biographical details and a Likert style scale that measured the domains of work-related stress was used. A sample size of 105 was calculated, and this research yielded a 98% response rate with 103 questionnaires completed over a five-month period. Data was captured in Microsoft Excel and STATA Version 15 (Stata Corp 2017) software for descriptive and inferential statistical analysis.

Results: The findings revealed that OHNPs experience a heavy workload with minimal managerial support, especially when workplace changes have an impact on their role and function as an OHNP. The OHNPs excel in their control over their work and in their roles and functions. More than half of OHNPs have support from their colleagues; however, more than half are reporting strained relationships at their workplaces.

Recommendations/Conclusion: Further research is recommended regarding the work-related stress of OHNPs in other provinces in the RSA, in Africa, and internationally. The development of a work-related stress questionnaire designed specifically for the OHNP to investigate the demands placed on OHNPs in greater depth needs to be developed. It is recommended that OHNPs consider resilience, mindfulness, and work-life balance training as it is important in the maintenance of good mental health.

Key Words: occupational health nurse practitioners; occupational health nurses; work-related stress; occupational stress; occupational health; mental health in the workplace

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CHAPTER ONE

ORIENTATION TO THE RESEARCH

1.1 INTRODUCTION

This chapter provides an overview of the research project to assess the work-related stress of occupational health nursing practitioners (OHNPs) operating in the Republic of South Africa's Gauteng Province's four regions.

This chapter covers the background to the research, the motivation and rationale for why this research is important, the research problem which then formulates the research question and frames the purpose and objectives. The research design and method are briefly described. Limitations and operational definitions of main concepts are given, and the chapter then concludes with the outline of the chapters included in the research report.

1.2 BACKGROUND TO THE RESEARCH

OHNPs operate in a specialized sector that focuses on the interaction between the work environment and worker health to enhance, protect, and restore worker health (South African Nursing Council, 2013). The South African Society of Occupational Health Nursing Practitioners (SASOHN) is a non-profit professional association (Grainger & Michell, 2003) that monitors the requirements of OHNPs and promotes occupational health in industry (Michell, 2011). Occupational health nursing combines scientific information from nursing, medicine, public health, occupational health (including toxicology, epidemiology, occupational hygiene), social and behavioural sciences, and business management and administration principles (South African Nursing Council, 2013). The expanded role of OHNPs includes health promotion and education that provide stress reduction and management (Huiskamp & Matingo, 2014).

OHNPs are in a favourable position to be at the forefront of workplace health promotion/wellness to assist employees in dealing with mental health and work-related stress (World Health Organisation, 2002). The OHNP is also an employee and potentially subjected to stressors in the specific work setting in terms of many different roles, e.g. liaising with many stakeholders, practising as the sole provider of a service, and many other aspects (Ballard, 2016).

A critical skill the OHNP must possess is making a judgement decision about an employee’s ability to cope with specific jobs based on their health status (South African Nursing Council,

2013). An employees' first point of entry or only accessible means into the healthcare system is often the occupational health clinic (Steenkamp, 2016), located in industry, factories, offices, or mobile clinics (Ballard, 2016). Primary health care services such as health assessments, treatment for minor ailments, and chronic disease management are offered by OHNPs to their clients (Grainger & Michell, 2003). OHNPs frequently work alone and are solely responsible for employee health (Ballard, 2016).

There are physical or psychosocial aspects of one's work that are linked to mental illness, and the World Health Organisation estimated that 15-30% of employees would experience mental illness during their practising life (Roelen, et al., 2018) Work-related stress is a significant contributor to mental health problems in the workplace; it can contribute to the onset of a mental health problem or exacerbate an existing one, with occupational consequences such as low engagement, low job satisfaction, absenteeism, poor job performance, and an increase in sick leave. (Mickel, 2019).

Nurses' occupational stress is a well-documented and researched global phenomenon. Most previous research has been based on nurses in hospitals, either in specialised or acute units (Galdikiene, et al., 2016). Nurses practising in different workplaces may identify with varying types of work stress (Guo, et al., 2019), and occupational stress can differ between countries; urban and rural environments, and other types of healthcare services such as the occupational health service. However there is a lack of research about the work-stress of OHNPs (Galdikiene, et al., 2016).

A healthy work environment is essential for retaining and recruiting nurses (Nowrouzi, et al., 2015). The healthcare professionals in a healthcare establishment are its most valuable asset. If the healthcare professional is troubled by their health or other stressful events, it affects their ability to give their full attention to and concentration on their work. No hospital or clinic can work effectively if there is a high incidence of ill-health among healthcare professionals (Department of Health, 2003). Transforming toxic working environments into healthy environments and improvements in recruitment and retention of nurses lead to an increase in job satisfaction and client outcomes (Maphangela, 2015). Nurses are one of the most susceptible professional groups to be affected by occupational stress as they are often faced with situations that involve patient care, decision-making and taking responsibility (Maphangela, 2015)

When an individual is incapable of meeting the demands in the work environment due to a lack of resources or coping strategies, there are physiological, occupational, and

psychological consequences to the individual and organisation (Yuwanich, et al., 2015). Physiological effects of stress are related to the degree of stress that an individual is experiencing. Musculoskeletal pain, fatigue, and headaches are the most reported symptoms and stress may also become apparent in the development of cardiovascular, metabolic, and gastrointestinal illnesses (Yuwanich, et al., 2015).

Occupational consequences such as increased absence from work, inability to meet the demands at work, lack of motivation, an increased desire to leave a job, early retirement, job dissatisfaction and unsatisfactory quality of patient care have been recognised (Khamisa, et al., 2017).

Berg, et al.,(2016) are of the opinion that healthcare professionals may experience emotional instability, avoidant behaviours, sleep and eating disorders, fatigue, anxiety, lack of confidence, and decreased functioning in the professional and nonprofessional setting. Furthermore, the same authors state that suicidal ideation and a diminished sense of purpose or enjoyment in their work as psychological side effects of working in high-stress and high-demand environments (Berg, et al., 2016).

When individuals are exposed to prolonged occupational stress caused by physical and emotional demands from caring for patients, burnout may occur (Grigorescu, et al., 2018).

Work-related stress has adverse effects that affect an individual in other life domains such as leisure, family, financial wellbeing, housing; friendships; educational attainment; community engagement, neighbourhood interactions, spiritual wellbeing, cultural and social status (Nowrouzi, et al., 2015)

1.3 MOTIVATION AND RATIONALE FOR THIS RESEARCH

Work-related stress is an occupational hazard that affects healthcare professionals physically by causing cardiovascular, metabolic, and musculoskeletal disorders; psychological disorders evidenced by aggression, sleep disturbances, low morale, inability to concentrate, fatigue, and depression; and organisationally by increasing absenteeism and turnover (Yuwanich et al., 2015).

As an occupational health nursing student, the researcher is interested in work-related stress as a psychosocial risk in the workplace and the well-being of OHNPs.

The researcher was motivated by the following considerations:

- Within the occupational health services industry, this research can contribute to the body of knowledge of occupational health nursing, occupational health, and human resource management. Due to the gap in the literature with regard to work-related stress of OHNPs, nationally and internationally, the results of this research can potentially be a motivator for further research in this field.
- By investigating and describing the outcomes of OHNPs work-related stressors, it may be possible to identify areas of work that contribute to or cause stress.

1.4 RESEARCH PROBLEM AND RESEARCH QUESTION

Work-related stress among nurses, mainly in hospitals, has been extensively researched internationally and nationally. The researcher could find only one study on the job satisfaction and stress levels of the OHNP in the United States of America (USA), restricted to one occupational setting (Ballard, 2016). In addition, Ballard (2016) believes that studies related to stress in occupational health nursing are a research opportunity.

After an extensive literature search, very little information was found specific to OHNPs work-related stress and is thus a gap in the literature was identified. Therefore, this is the first attempt to investigate the stress levels of OHNPs in the country. This research will focus on the sources and levels of stress in OHNPs as employees.

This researcher intends to answer the following research question:

- What are the stress levels and factors that contribute to work-related stress among occupational health nurse practitioners in the Gauteng Province who are members of SASOHN?

1.5 PURPOSE AND OBJECTIVE OF THE RESEARCH

The primary purpose of this research was to investigate the contributing factors and levels of work-related stress among occupational health nurse practitioners in the Gauteng province.

To achieve the purpose of the research, the following research objectives needed to be determined:

- To identify the work-related stress levels in OHNPs in the Gauteng Province.
- To describe the biographical and work-related factors which contribute to work-related stress among OHNPs in Gauteng Province.
- To determine the association between the work-related stress domains and demographic details of OHNPs in the Gauteng Province.

1.6 LIMITATIONS OF THE RESEARCH

The research was limited in terms of the following criteria:

- Research setting and population: The study was limited only to OHNPs who are members of SASOHN working within Gauteng Provinces' four regions, namely Gauteng Central, Pretoria, West Rand and Vaal.

1.7 RESEARCH DESIGN AND METHOD

A cross-sectional design and a survey method were applied in this research using a structured self-administered questionnaire with items relating to stressors in the workplace, according to the Health and Safety Executive Management Standards Indicator Tool (HSE-MSIT). The self-administered questionnaire included a section about the biographical details of the OHNPs. A cross-sectional survey was used to investigate stressors that have the probability of a negative influence on employee productivity and health. Although there is no single questionnaire that is sufficient to explore all the hazards of work stress, the HSE-MSIT was able to provide a description of how well the workforce reflects their work-related stress relating to the six management standards; demands, control, support, relationships at work, role, and organisational change (Cousins, et al., 2004).

1.8 DEFINITION OF MAIN CONCEPTS

For this research study, the following concepts are defined as follows:

Work-related Stress: Work-related stress is a reaction that a person may have when confronted with work pressures and duties that surpass their knowledge and capabilities, putting their ability to cope in jeopardy. As a result, physical and psychological well-being may be affected, directly or indirectly, by the experience of stress (World Health Organisation, 2010) In this research, work-related stress is caused or made worse by work according to the 6 management standard domains of demands, control, support, relationships, role, and change.

Occupational Health Nurse Practitioner: A person who is registered with the South African Nursing Council in terms of Part 31 of the Nursing Act 33 of 2005, who is qualified and competent. This requires the professional nurse and midwife or general nurse with advanced midwifery experience to complete a postgraduate programme in the occupational health nursing specialty, and to register the qualification as a nurse specialist at the South African Nursing Council (South African Nursing Council, 2020). For this research, OHNP denotes a registered nurse with an additional registered postgraduate qualification namely a diploma in

nursing, advanced diploma, certificate, bachelors or masters degree in Occupational Health Nursing, currently practising as an OHNP.

Occupational health nursing: The specialised field of occupational health nursing is an advanced field of nursing that offers and delivers health and safety programmes and services to workers and worker populations at their place of employment. The main goals are enhancement and maintenance of good health, the avoidance of disease and injury, and defence against environmental and occupational hazards. OHN is nursing a workplace holistically/ comprehensively.

Gauteng Province: Gauteng Province is the smallest of South Africa's nine provinces, although it has the highest population proportion. Some of the most important economic sectors include financial and commercial services, logistics, manufacturing, real estate, telecommunications, and commerce. The province has a cohesive industrial complex with significant economic hubs in the Vaal Triangle, the East, West, and Central Rand, and Pretoria (Government Communications (GCIS), 2016). For this research Gauteng Province is divided into SASOHNs four regions of Central Gauteng; Pretoria; West-Rand and Vaal.

1.9 OUTLINE OF THE RESEARCH REPORT

This research report has five chapters and is described as follows:

Chapter One: Orientation to the research provides the background and description of the research study.

Chapter Two: The literature review provides information from previous research and a detailed discussion of the various concepts relating to the research.

Chapter Three: Research Design and Method focuses on the approach, design and method that was used to attain the objectives and answer the research question of the research study.

Chapter Four: Data analysis and results are the main focus of this chapter. It presents the results from the research, discusses the findings and relevant literature relating to the results.

Chapter Five: Summary of research findings, limitations, recommendations and conclusion will be discussed.

1.10 SUMMARY OF CHAPTER ONE

This first chapter provided an overview and context for this study, as well as the motivation, rationale, and significance of the problem of work-related stress amongst OHNPs in Gauteng Province. This chapter described the research's purpose and objectives to formulate the

research question, whilst outlining the design and method in order to answer the research question. Limitations and operational definitions of the main concepts in this research were described.

The next chapter provides an explanation of the researcher's literature review, which articulates the study's theoretical framework.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Work-related stress is of great concern in occupational health and occupational health nursing.

To facilitate the researcher's knowledge and understanding of work-related stress and stress in nursing, an extensive literature review was undertaken. A review was done in journals, textbooks, master's dissertations, and doctoral theses. In addition, South African Acts of Parliament and policies relating to work-related stress were reviewed and taken into consideration. The databases used were EBSCOHost; Wiley; SpringerLink; PubMed; ClinicalKey; APA PsycArticles; ProQuest, Google Scholar, and SAGE Journals. Key search words that guided the review were: occupational health; occupational health nursing; industrial nursing; work-related stress; occupational stress and nursing. There are many standards, interactional models and theories that centre around work-related stress; however, the focus will be on the Health and Safety Executive Management Standards (HSE-MSIT) and the job demand-control-support model. Work-related stress is becoming a global problem as the incidence of this phenomenon is on the increase (Yuwanich, et al., 2015

2.2 WORK-RELATED STRESS: A CONCEPTUAL ANALYSIS

2.2.1 What is Work?

Work is defined as a meaningful activity that people undertake to meet and fulfil their various physical and psychosocial needs; work is commonly seen as a rite of passage into adulthood and creates a personal identity, especially if the work contributes to the welfare of society (Acutt & Hattingh, 2016).

Work always has some personal significance for an individual, whether it be contextual, psychological, social, or cultural/spiritual, as a person is in some ways defined by the work that they do. However, a person's preferred occupations may change over time, as it depends on various personal circumstances or factors that may cause a change (Hinojosa, et al., 2017). Personal success and psychological adjustment often go hand in hand with job and career success (Acutt & Hattingh, 2016).

People go to work for a variety of reasons, and these benefits can be viewed as work rewards. Work contributes financially to meet physical needs like housing, food, clothing, security, and healthcare. Some jobs also offer chances for exercise, knowledge expansion, or experiences

that can help people develop their social and cognitive skills (Acutt & Hattingh, 2016). In the current day and age, work is commonly regarded as restricted to gainful employment or paid work (Hinojosa, et al., 2017).

2.2.2 What is Stress?

Hans Selye, an endocrinologist, has been described as the "father of modern stress" (Burman and Goswami, 2018, p. 2231) as he describes stress as a syndrome that comes from anything that pushes us out of balance or disrupts homeostasis (Breton, 2020). Carlson describes stress as "nothing more than a socially acceptable form of mental illness" (Burman & Goswami, 2018, p. 2231). In addition, Breton (2020) states that stress plays a universal part in our lives and the lives of all living things, it may come from physical activities, or it can arise from psychological worries.

According to the Canadian Centre for Occupational Health (2018), the human body and mind are pre-programmed with an autonomic response system that is designed to deal with stress. However, stress is not the same from person to person, and the reaction an individual has to a real or perceived threat cannot always be the fight or flight response, as this reaction may not be appropriate for solving the cause of stress. It is therefore important that individuals have to work on solutions and find constructive ways to deal with the perceived threat.

The stress response starts with the detection of a threat or noxious stimulus. Once this is detected, the brain assesses if the stressor represents a problem which is when the brain determines if and how strong a response is warranted. The outcome is dependent on an individual's previous experience with this type of threat, the resources available and the degree of control that is associated with the demand that the stressor places on the individual (Breton, 2020).

Many people are accustomed to stressful situations; thus, they often do not recognise the signs and symptoms of stress until they have reached their breaking point (Butler, 2020). Stress can have an impact on everything from the capacity to pay attention to the drive to get out of bed every day. The intensity, predictability, and length of the stressor are all factors to consider when determining the role of stress in motivational behaviour (Breton, 2020). There is an optimal amount of stress that directs focus, motivation, and heightened performance, which is called eustress, whereas, on the opposite scale, there is distress which is the negative stress that leads to exhaustion (Breton, 2020).

Not all stress is bad. Some stress is beneficial (Butler, 2020) and human beings often seek out "stressful situations" which are exciting, such as watching scary movies, riding on roller

coasters, or skydiving. Positive stress can be seen as a challenge that provides us with the energy and motivation to complete deadlines or goals, which furthermore enhances a sense of satisfaction and happiness (Canadian Centre for Occupational Health and Safety, 2018).

However, too much stress or long-term excessive stress (Fortes, et al., 2020) can cause mental illnesses (Butler, 2020) such as depression, anxiety (Fortes, et al., 2020) and depressive-like symptoms such as decreased pleasure, social withdrawal, behavioural despair and learned helplessness (Breton, 2020).

Factors that cause stress are called stressors (Nayak, et al., 2020), and stressors include physical activities, such as running a marathon (Breton, 2020), or common demands such as domestic problems, divorce, finances, economy, or long working hours with a difficult manager, or caring for family members (Acutt & Hattingh, 2016).

2.2.3 What is Work-related Stress?

Work-related stress has been classified as an occupational hazard (Acutt & Hattingh, 2016) as it is closely correlated with employee exposure to psychosocial risks that arise between certain aspects of the description of their work, such as the organisation, management, and environment, with the skills and needs of the employees (De Sio, et al., 2020). Work-related stress is defined as the harmful physical and emotional response that occurs when the demands of expected work exceed the available resources and employee capabilities (Faremi, et al., 2019). Many different sources of work-related stress can affect both the employee and the employer (Nayak, et al., 2020).

Work-related stress is a harmful physical, and psychological reaction that occurs in the workplace when there is a conflict between the combination of job demands that an employee or employer is faced with and the amount of control, they are given to overcome a situation (Canadian Centre for Occupational Health and Safety, 2018). The way an individual evaluates an event, influences how they react emotionally. First, they evaluate the situational demands of the working environment. For a reaction with a negative consequence on well-being to generate, the individual has to see themselves as lacking the personal or physical resources to deal with the demands of the said working environment (Hirschle & Gondim, 2020).

Zaghini et al. (2020) describe work-related stress as the organisational and emotional demands of work that lead to psychological strain that results in work-related difficulties, tension, frustration, anxiety, and worry.

Professions that have increased demands with decreased support are at a higher risk of developing job burnout and lower engagement; professions that are human-centred such as healthcare professionals and teachers, often have high rates of job burnout (Canadian Centre for Occupational Health and Safety, 2018).

Chirico, et al., 2019 state that many countries have enacted legislation to prevent occupational health and safety risks. These measures focus on traditional risk factors such as physical, biological, or chemical risk factors (Chirico, et al., 2019). The same authors however are also of the opinion that there has been little thought given to interventions for the "fourth group" of occupational health and safety risks, which are psychosocial hazards and risk management (Chirico, et al., 2019).

A psychosocial work environment includes factors at work that play a role in work organisation, design, and management; it incorporates work demands, rewards, availability of organisational support and interpersonal relationships within the workplace (Jain, et al., 2021).

A hazard is defined in this context as a potential source that may cause psychological harm to an employee (Canadian Centre for Occupational Health and Safety, 2018). The International Organization for Standardization (ISO) (2021) interprets psychosocial hazards as the nature of how the workplace is organised, including the social factors and aspects of the work environment, equipment, and hazardous work, whereas Chirico et al. (2019) see's those psychosocial hazards as related to the organisational work design and management thereof, and similarly to the social and environmental perspective.

Jain et al. (2021) imply that when these psychosocial hazards are not taken into consideration, the aspects of work organisation, design and management have the potential to harm an employee's health and safety in the form of poor mental health, heart disease, musculoskeletal disorders and sickness, including harm to the organisation with adverse incidences related to poor productivity and human error.

Workplace psychosocial risks are aspects of the work's design and administration, as well as its social and organisational surrounds, which have the potential to inflict psychological or bodily harm (World Health Organisation, 2008). An organisation's ability to convey a positive or negative work environment depends on how it manages psychosocial risks as a whole to stop incidents of psychosocial hazards from harming anyone (Jain et al., 2021). Psychosocial risks are defined as the possibility that an employee will experience negative health effects

and harm when exposed to a combination of a hazardous event and the severity of health damage caused by a psychosocial hazard (International Labour Organization, 2020).

According to the ISO (2021), psychosocial hazards that may affect the well-being at work consist of how work is organised, social factors at the workplace, the working environment, the equipment, and the nature of hazardous work tasks. Wellbeing at work is described as a fulfilment of the employee's physical, mental, cognitive, and social needs, which are related to their work. An individual's well-being at work contributes to the quality of life that the employee has outside of work.

The Canadian Centre for Occupational Health and Safety (CCOHS) (2018) has identified 13 organisational aspects that have been identified as psychosocial risk factors in the workplace:

- psychological support
- organisational culture
- clear leadership and expectations
- civility and respect
- psychological competencies and requirements
- growth and development
- recognition and reward
- involvement/influence
- workload management
- engagement
- balance
- psychological protection
- protection of physical safety

Additional psychosocial risks which include stigma and discrimination; work-life balance; bullying in the workplace and violence and harassment have been recognised.

The CCOHS (2018) aspect of clear leadership and expectations describes how effective leadership and support in an organisation help employees understand their roles in terms of what tasks they need to complete, how their work contributes to the organisation, and being informed of any potential changes. Good leadership styles will be reflected by employees having increased morale, resilience and trust with low levels of frustration, conflict, and sick leave (Canadian Centre for Occupational Health and Safety, 2018).

A lack of a clear organisational vision and objectives, poor and/or inconsistent decision-making procedures, a lack of accountability, an ineffective communication style and support - including withholding information or failing to listen to employees' suggestions or complaints - an abuse or misuse of power, as well as favouritism, are all signs of dangerous leadership styles that are inappropriate for the organisation's work. (International Organization of Standardization, 2021). Employers who lack clear leadership styles will be more likely to have employees having physical health-related complaints and malaise, including psychological irritability and nervousness (Canadian Centre for Occupational Health and Safety, 2018).

The ISO (2021) aspect of roles and expectations as psychosocial hazards are described as situations where employees do not have clear guidelines regarding what they are expected to do and what not to do; uncertainty and frequent changing of tasks and work standards; performing work that has little value or no purpose, and being expected to perform roles that undermine each other, such as being expected to give clients good service while spending as little time with them as possible. Employees who are exposed to these psychosocial hazards experience role ambiguity and conflict.

Workload management is understood as the ability to accomplish tasks and responsibilities within the time available. A large workload with time constraints is one of the major workplace stressors. The number of resources available must also be acknowledged as time, equipment and support are considered as resources (Canadian Centre for Occupational Health and Safety, 2018). The ISO (2021) definitions of workload and workplace hazards are when an employee is subjected to deadlines with increased levels of time pressures, is continually doing high levels of repetitive work, or is either dealing with work overload or under-load. When employees are not coping with workload management and when demands are high with low control, they will experience physical, psychological, and emotional fatigue with an increase in stress and strain. An emotional fatigued employee will feel an increased sense of inadequacy and a lowered sense of personal accomplishment (Canadian Centre for Occupational Health and Safety, 2018)

The physical, social, and organisational aspects of a job that require prolonged physical or mental effort are referred to as job demands (Lesener, et al., 2019). The job demand psychosocial hazards that the ISO (2021) has highlighted are when there are conflicting demands and deadlines with unrealistic expectations of an employee’s competence level, or the underuse of an employee’s skill; having too much work to do within a certain time limit

with a set number of workers; lack of task variety; and performing highly repetitive tasks or fragmented and meaningless work.

Job control equates to the discretion that an employee has over their control of tasks and the schedule they have over their work (Gonzalez-Mulé & Cockburn, 2021), such as when, how, and where they will carry out their tasks (Wemken, et al., 2021). The psychological hazard that employees may face here would be when there is a lack of control with a low level of influence and independence in deciding the speed, order or schedule of tasks or workload, all while having a limited opportunity to participate in decision making (International Organization of Standardization, 2021).

Job demands decrease job satisfaction; however, when allowed to have decision-making latitudes regarding intellectual demands can increase job satisfaction. Additionally, if the job demand and job control are high, an employee can thrive in the workplace, which allows for positive coping behaviours (Canadian Centre for Occupational Health and Safety, 2018). However, high demands and low control exposes an individual to an anxious state which, if left unresolved, causes an exacerbation of physical and psychological strain which leads to a deterioration in physical and mental health (Gonzalez-Mulé & Cockburn, 2021) and to emotional fatigue, a sense of inadequacy and a low sense of accomplishment (Canadian Centre for Occupational Health and Safety, 2018).

The hazards of a psychosocial nature identified by ISO (2021) with regards to social factors are in the areas of interpersonal relationships and support. Hazards commonly identified are poor communication, information sharing and support between management, supervisors and co-workers; interpersonal conflicts which could develop into harassment, bullying and victimisation, and lack of access to support services. When psychological support is lacking, there is an increase in sickness absenteeism; emotional withdrawal; interpersonal conflict; strains such as fatigue, headaches, burnout, and anxiety; and an increase in turnover and loss of production (Canadian Centre for Occupational Health and Safety, 2018).

Organisational change is linked to external pressures and occurs when inconsistencies are deemed critical to achieving organisational goals such as performance improvement, the prevention or elimination of a crisis, and the ability to compete. It may entail changing the vision and mission statements, organisational strategy, culture, systems, production techniques, or leadership styles (Odor, 2018). The psychosocial hazard that may develop in this context would be a prolonged or repetitive restructuring; when there is a poor or total lack of communication or consultation about the changes in the workplace, or when once the

changes are established, that there is a limited amount of practical support from the organisation provided to assist employees in the orientation to the changes. (International Organization of Standardization, 2021)

Foster (2020) is of the opinion that the top-ranked stressors in an organisation that deals with mental health users concern time constraints (68%) and workload demand (66%), where the workload is seen as having multiple demands at one time while there is an inadequate amount of time to realistically complete.

2.3 STANDARDS AND MODELS THAT EXPLAIN WORK-RELATED STRESS

2.3.1 The Health and Safety Executive Management Standards (HSE-MS)

Cousins and Mackay created the HSE-MS in 2004 to reflect the characteristics of an organisation that recognize and manage the hazards of work-related stress (Wall, et al., 2021). They aim to provide an instrument that can incorporate the assessment of the psychosocial risks on an individual level but can include the risks within an organisation (Wood, et al., 2019).

The content of the management standards are constructed into six psychosocial working factors that can be linked to employee health and wellbeing, productivity, and absenteeism (Wall, et al., 2021). The HSE-MS standards emphasise holistic and participatory approaches where the employees are seen as partaking in an active role in the organisation (Cassar, et al., 2018).

The psychosocial factors that are incorporated into the HSE-MS framework are described as follows:

- Demands relating to workload and work patterns (Wall, et al., 2021) and the demands of the environment (Wood, et al., 2019).
- Control: the influence that the employees can exercise over how their work is done (Wood, et al., 2019).
- Relationships: this focuses on the different social relationships that employees encounter (Wall, et al., 2021), the perceived interpersonal conflict at work (Wood, et al., 2019) and acceptable behaviours in the professional environment (Wall, et al., 2021).
- Role: this encompasses the extent to which the employee understands his/her role in the overall organisation and how their role contributes to the organisation without any conflicting expectations (Wall, et al., 2021).When an employee lacks information

about their aims, roles, and responsibilities, they are said to be in a position of ambiguity, and when there are two or more contradictory expectations about the function they play in the organisation, they are said to be in a role of conflict. (Harvey, et al., 2017).

- Change: when change processes are made in an organisation, how are these changes communicated to the employees (Wood, et al., 2019), and are the changes handled in a safe way to protect the employees' wellbeing? (Wall, et al., 2021) Organisational change may include technological or management changes with regards to downsizing, relocation, restructuring, merging or changing the number of work demands on employees (Harvey, et al., 2017).
- Support: Managerial support incorporates the encouragement and resources provided to the employee by the employer, managers, and the organisation. Peer support includes the resources and support that is provided by colleagues (Wood, et al., 2019). Workplace conflict and bullying start with negative behaviours taken against an employee, and if they continue for a long time, it becomes workplace bullying. (Harvey, et al., 2017).

The HSE-MS has been compared to Karasek's Job Demand-Control-Support Model (1985), which measures work tasks using the high demand, low control, and low support model of job strain (Wood, et al., 2019).

2.3.2 Job Demand-Control-Support Model

The Demand-Control Model, developed by Karasek in 1979, is similarly utilised when studying risk factors of work-related stress in organisations as it depicts a broad spectrum of human resources in work situations (Lagrosen & Lagrosen, 2020). Social support was incorporated into the Demand-Control Model in 1985, as social support from colleagues and supervisors is seen to lessen the effects of high psychological demands with low control (Roelen, et al., 2018).

Support is an experienced notion that is subjective to each individual; therefore, support can only apply to the extent that the employee perceives it (Lagrosen & Lagrosen, 2020).

Job control is the extent to which an employee has the independence to make decisions about and take control over their work tasks (Bagheri Hossein Abadi, et al., 2020)

According to Lagrosen and Lagrosen (2020), there are four types of work that are associated with the demand-control model. High-strain work is highly demanding with low control. Passive work is low-demand and low-control employment that rarely allows employees to use

their full capabilities since the task is unchallenging and unpleasant, lowering motivation and morale. Low-strain employment is less taxing and provides a greater sense of control, lowering the chance of developing health problems, however there are few opportunities for advancement, and the work is uninspiring. Active work is challenging, interesting, and stimulating as there is a high demand and control. It still has its challenges, but there is less of a risk of developing health problems.

Harvey et al (2017) believe there is moderate evidence that links high demands and low social support in the workplace to the development of depression. He concludes that high demands, low control, and low social support from co-workers and supervisors account for stress-related disorders.

The HSE-MS and the job demand-control-support model incorporates a broader view of the domains of work-related stress, therefore it was beneficial to use a holistic rather than a limited model of work-related stress. This provided a wider array of pinpointing of what causes and what does not cause work-related stress. Once stress inducing domains are identified and other domains can be excluded, further research can narrow down and explore these specific domains in more depth.

2.4 OCCUPATIONAL HEALTH NURSING

OHNPs are employed in a specialist field that aims to improve, protect, and restore health to employees by focusing on the relationship between the work environment and health (SANC, 2013). OHNPs are required to have a multi-faceted knowledge base to render a diverse, high quality and holistic client-centred service that promotes the health and working ability of all the employees in the economic environment (Nissinen, et al., 2020). Occupational Health Nursing incorporates scientific knowledge of a theoretical and conceptual framework for the fields of nursing, medicine, public health, occupational health, toxicology, epidemiology, occupational hygiene, social and behavioural sciences, and business management and administration principles (SANC, 2013). Therefore it is important that the OHNP continuously develops their professional skills and competencies in health promotion, education and surveillance, case and risk management, infection control, travel and ergonomic health (Nissinen, et al., 2020).

OHNPs professional roles include delivering health and safety programmes and services to employees; implementing promotion and restoration of health; and preventing illness and injury by protecting the worker from work-related and environmental hazards. (SANC, 2013). The OHNPs expanded role includes health promotion and education, which incorporates

stress reduction and management (Huiskamp and Matingo, 2014). When changes are implemented at work, the OHNPs are challenged to expand their role further to accommodate new duties; however, the traditional tasks and activities that exist do not disappear (Nissinen, et al., 2020).

OHNPs are at the forefront of workplace health promotion/wellness as they can assist employees to manage mental health and work-related stress (WHO, 2002). OHNPs are affected by stressors in the work setting as they assume different roles such as having to liaise with stakeholders, working alone, or frequent travel and many other aspects (Ballard, 2016). Stress harms health, and as such, the OHNP needs to be aware of their stressors and the effective management thereof to facilitate stress management in the workplace (Adams, 2015).

2.5 ROLES OF THE OCCUPATIONAL HEALTH NURSING PRACTITIONER

OHNPs are required to demonstrate a wide array of competencies and knowledge in their practices (World Health Organisation, 2001). The roles and functions an OHNP performs are complex, frequently overlap with one another, and it is referred to as a "set of prescriptions that define behaviour in terms of professional practice" (Acutt & Hattingh, 2016:188).

The Roles of the OHNP are as follows:

2.5.1 Consultant

An OHNP is a member of an interdisciplinary team WHICH develops necessary policy and protocol/practice documentation (Michell, 2011). The OHNP must also use their expertise to inform members of management and occupational health teams on the legal domain of occupational health (Acutt & Hattingh, 2016).

The OHNP needs to have a thorough understanding of the work processes, materials, and work environment, and they must be able to identify hazards relevant to the workplace by doing a routine inspection of the worksite to identify employee exposure to hazards (Michell, 2011). When the OHNP has information and has observed individual groups' specific hazards, there is an opportunity to develop targeted health assessments and give advice on control strategies (World Health Organisation, 2001).

OHNPs have a responsibility to collaborate with management, human resources, and line managers with regards to the functions of the occupational health service and to consult on data that highlights the detected occupational exposures and risk assessments, together with a

planned intervention on preventive and control measures to improve working conditions (Michell, 2011).

2.5.2 Clinician

An OHNP clinician's role equates to the provision of quality nursing care (Acutt & Hattingh, 2016) and having the ability to formulate a nursing diagnosis by identifying, assessing, planning, implementing, and evaluating individual or group nursing care plans (World Health Organisation, 2001), and to prevent illness, disease and complications that may arise from the workplace (Michell, 2011).

The OHNP has a legal obligation to conduct fitness-for-work assessments (Acutt & Hattingh, 2016). The health assessments include pre-placement medical exams - a baseline assessment before employment to evaluate suitability, psychological and physical capabilities for the proposed work the individual is applying for (Michell, 2011), and periodic health assessment at regular intervals (Acutt & Hattingh, 2016). Return to work assessment is done when an employee comes back to work after an accident or extended sickness absence. An exit medical assessment is the final assessment done at an organisation to evaluate if the employee has developed an occupational disease or sustained any injuries while at work, and if there is any need for compensation (Michell, 2011).

The OHNP is involved in direct patient care and offers curative and treatment services (World Health Organisation, 2001). The OHNP assesses and manages common ailments, may monitor and manage chronic health conditions, provides counselling, and offers immunization services (Michell, 2011).

2.5.3 Educator

The OHNP furthermore performs the role of an educator within existing training programmes or in additional workplace health promotion activities (World Health Organisation, 2001). Employees have the right to be informed and trained on the hazards at the workplace that could affect their health and wellbeing, and the OHNP communicates these to management to implement control measures to prevent employee harm (Michell, 2011).

2.5.4 Researcher

Evidence-based practice is expected of OHNPs, who must critically analyse occupational health literature, evidence, and reports and apply it to their professional practices (South African Nursing Council, 2013).

Epidemiological research is the most widely used form of investigating occupational-related ill health and diseases (World Health Organisation, 2001). It involves gathering statistics and evidence of association (Acutt & Hattingh, 2016), which are used in adapting existing or developing new directed workplace health programmes (Michell, 2011).

2.5.5 Manager/Leader

An OHNP is required to understand the principles of management to be able to align the goals of the occupational health service with the organisation's goals. Furthermore, the OHNP functions as a motivator for staff and is viewed as a role model in their professional practice and attitude. He/she has an important role in mentoring and training their colleagues and students who are entering the Occupational Health field (Michell, 2011).

The World Health Organisation's (2001) description of the management and administration role of the OHNP entails the ability to maintain medical and nursing records while rendering quality assurance by partaking in auditing and quality improvement tasks, regarding services and professional standards. Additionally, Acutt and Hattingh (2016) qualified that administration is aligned with setting goals, devising policies, writing reports, and keeping efficient records.

Rogers et al. (2014) believe that OHNPs must be able to work both independently and collaboratively with other members of the work organization because they perform a variety of roles at work. Although collaboration with non-medical disciplines may hinder the OHNP, as they may try to control the nursing practice or not feel comfortable with the OHNP taking the lead in decision-making processes, it is crucial for OHNPs that the interdisciplinary team is aware of their roles and the services they provide in order for them to successfully collaborate and meet the needs of the employees (Rogers, et al., 2014).

Healthcare work puts a lot of different responsibilities on healthcare professionals. This tends to produce a sense of over-commitment to their work, and the need for the OHNP to seek approval and be valued at work may trigger work-related stress (Huang, et al., 2019).

2.6 WORK-RELATED STRESS OF PROFESSIONAL NURSES

Healthcare professionals are a professional category that is often exposed to the risk of developing work-related stress (De Sio, et al., 2020). Nurses' work-related stress is a well-documented and researched global phenomenon. The majority of previous research has been based on nurses practising in hospitals, either in specialised or acute units (Galdikhene, 2016). Nurses practising in different workplaces may identify with different types of work stress

(Guo, et al., 2019) and work-related stress can differ between countries, urban and rural environments, and different types of healthcare services (Galdikiene, et al., 2016).

According to the South African Nursing Councils (SANC) (2013) document titled Competencies for the Occupational Health Nurse Specialist, OHNPs share commonalities within the domains and sub-domains of the competency framework with other nursing, notably the Community Health Care (CHC) nurses and Primary Health nurses.

Nesengani et al. (2019) conducted research on CHC nurses' experiences of caring for patients in public health clinics in Ekurhuleni. It was revealed that CHC nurses are exposed to a range of disempowering situations that make them feel discouraged and demotivated. CHC nurses had a high workload with limited resources in the sense that there were crowds of patients but no medication or critical functional equipment to handle their ailments. Despite the shortage of nursing staff on duty, all available services were required to be fully functional. The employer was only concerned with the number of patients who needed to be seen daily.

Major work-related stress in the CHC sector is related to conflicts between tasks and demands, consequences of working mistakes, and insufficient staff relating to low salary and social status (Guo, et al., 2019). The world of healthcare is constantly changing, all while the CHC facilities are suffering without trained nurses to provide safe and quality care (Butler, 2020).

The mental healthcare clinic division has been identified as one of the most stressful environments to be employed in (Tununu & Martin, 2020). The unstable structure and service results in high turnover rates where the perception of the demands exceeds the capability to handle the stress (Hasan, et al., 2018). Mental health nurses' (MHNs) roles are to prevent harm to their patients and to others in the closed environment that houses mental health users who may have high levels of aggression and violence, which puts additional stress on the MHNs (Hasan, et al., 2018). A mental health environment of high acuity and high workloads coupled with a lack of resources and support from management and leaders is one of the key organisational challenges. It was reported that 70% of MHNs experienced physical aggression from mental health users, and bullying and conflict from and between colleagues (Foster, et al., 2020).

A study about occupational stress coping strategies and the psychological outcomes of psychiatric nurses in Port-Said, Egypt, was done by Hasan et al. (2018). One of the stressors identified was the variable tasks that mental health nurses were faced with. Such tasks ranged from planned tasks, actual nursing tasks and tasks that were not related to nursing duties. It

was found that these ranges of tasks increased stress levels of the MHNs which could ultimately lead to depression (Hasan, et al., 2018).

Coutinho et al. (2018) are of the opinion that nurses who are exposed to psychosocial hazards have a significantly higher risk of developing mental health problems, which may contribute to higher levels of stress and burnout.

2.7 THE RELATIONSHIP BETWEEN WORK-RELATED STRESS AND HEALTH

2.7.1 Physiological Health

Physiological consequences of stress are related to the degree of stress that an individual is experiencing. Musculoskeletal pain, fatigue and headaches are the most reported symptoms. Cardiovascular, metabolic, and gastrointestinal illnesses may become apparent as a result of increased levels of stress (Yuwanich, et al., 2015). Work-related stress is greatly associated with an increased risk of cardiovascular morbidity and mortality and an increased risk of cancer which was discovered in a meta-analysis study of 5700 incidents of cancer among 116000 European men and women (Ibrahim, et al., 2019). Work-related stress can cause physiological ailments such as musculoskeletal disorders, weakening of the immune system, exhaustion, fatigue, gastrointestinal disorders, and abnormal weight loss or gain (Tununu & Martin, 2020). Work-related stress is also a risk factor for developing common illnesses like the common cold or for developing type 2 diabetes (Portoghese & Galleta, 2017).

2.7.2 Psychosocial Health

Mental health is a multi-dimensional concept that is described as a state of well-being of an individual who has insight into their limitations and abilities, who can work productively, contribute fruitfully, and can cope with the daily stress in their life (Acutt & Hattingh, 2016). Psychological well-being is recognised as having positive internal functioning which consists of having a sense of self-acceptance and a sense of autonomy; the ability to recognise your sense of purpose, and mastery within your occupation, with a positive outlook on your personal growth and having positive relationships with your colleagues (Foster, et al., 2020).

Mental disorders that arise from the workplace are currently the leading cause of sickness absence from work, which has overtaken musculoskeletal disorders as one of the previous leading causes (Harvey, et al., 2017).

A study of 2784 Finnish female nurses revealed that there was a high risk of absenteeism related to psychiatric disorders such as depression and anxiety, which resulted from increased work demands (Ibrahim, et al., 2019). Work-related stress may manifest in behaviours such as the abuse of substances, namely alcohol or other drugs, irritability, anger, insomnia (Tununu

& Martin, 2020) or apathy (Hasan, et al., 2018). In France, stress and psychosocial problems are becoming more identifiable as an occupational disease, while depression, post-traumatic stress disorder or work-related suicide are being recognised as health effects or accidents that arise from workplace bullying (Fuller, 2019).

As a result of working in high-stress, high-demand environments, healthcare professionals may experience symptoms such as emotional instability, avoidant behaviours, sleep and eating disorders, fatigue, anxiety, lack of confidence, decreased functioning in professional and nonprofessional settings, suicidal ideation, and a decreased sense of purpose or enjoyment in their work (Berg, et al., 2016). Overwork and long working hours have been recognised as occupational hazards. Mental stress has been linked to cardiovascular diseases, ischemic heart disease and suicide (Fuller, 2019). Burnout can occur from prolonged work-related stress caused by physical and emotional demands (Grigorescu, et al., 2018).

Work-related stress furthermore has negative effects that affect an individual in other life domains such as leisure, family, financial wellbeing, housing, friendships, educational attainment, community engagement, neighbourhood interactions, spiritual wellbeing, and cultural and social status (Nowrouzi, et al., 2015).

2.7.3 Occupational Health

Occupational consequences of high stress levels such as increased absence from work, inability to meet the demands at work (Khamisa, et al., 2017) lack of motivation, an increased desire to leave a job, early retirement, job dissatisfaction and unsatisfactory quality of patient care have been recognised. When an individual is experiencing professional stress, it decreases their productivity because of a decrease in concentration, inability to pay attention to detail, low morale, and a decreased work engagement that could lead to medical errors and compromise in the quality of care (Berg, et al., 2016).

Work-related stress may furthermore lead to an increase in turnover in an organisation and an increase in absenteeism rates (Tununu & Martin, 2020). Absenteeism is an occupational consequence of stress as the institution will experience a loss of manpower which leads to additional expenses being utilised for the employment of temporary healthcare professionals and increased stress on colleagues, due to a shortage of permanent staff members (Salvagoni, et al., 2017).

Workload is a major factor in determining wellbeing. When there is an excessive workload with unclear instructions and unrealistic deadlines, it results in reduced work performance (Nissinen, et al., 2020).

2.8 WORKPLACE STRESS MANAGEMENT IN NURSING

A healthy work environment is vital for retaining and recruiting nurses (Nowrouzi, et al., 2015). If the healthcare professional is troubled by their health or other stressful events, it affects their ability to give their full attention and concentration on their work. No hospital or clinic can work effectively if there is a high incidence of ill-health among its healthcare professionals (Department of Health, 2003).

Work-related stress reduction recommendations by Badu et al. (2020) include resilience training programs and mindfulness-based stress programs, to name a few. Resilience is defined as the ability to adapt and adjust in the face of psychological, physical, or sociological adversity. It has been stated that the outcomes of resilience are a healthy mind and body, effective coping mechanisms, and personal growth. Mindfulness is one of the attributes that individuals can use to build resilience (Badu, et al., 2020). Employees' and supervisors' physical and psychological health may suffer if their resilience is damaged, which may lead to burnout, which in turn affects the quality of their work in terms of patient care (Rippstein-Leuenberger, et al., 2017).

Work-life balance is a mindfulness practice that promotes resilience. Self-care entails harmonizing the interconnected body, mind, and spirit. Regular exercise and involvement in recreational activities create feelings of joy, delight, relaxation, and laughter, Emotional boundaries imply a separation of work and home (Badu et al, 2020).

2.9 THE WORLD HEALTH ORGANISATION (WHO) AND INTERNATIONAL LABOUR ORGANISATION (ILO): HEALTHY WORKPLACE MODEL

According to the World Health Organisation (2010), a healthy workplace is one in which employees and managers work together to develop a continuous improvement process to protect and promote all employees' health, safety, and well-being, as well as the workplace's long-term viability. Consideration should be given to health, safety, and wellbeing concerns in the physical and the psychosocial work environment. This includes the organisation of work and culture, personal health resources, and participation in the community in order to promote the health of employees, their families, and other community members.

A healthy work environment is essentially a workplace that promotes well-being and is concerned for the health and safety wellbeing of its employees (World Health Organisation, 2010). It is a supportive environment with regards to adequate staffing, the ability to take breaks, the ability to leave work on time, and a manageable workload (Rippstein-Leuenberger, et al., 2017). It is a workplace that puts in place measures to decrease or

eliminate the employee's potential for harm, physically, emotionally, or psychosocially, and is interested in the employee and his/her family (Burton, 2010).

The WHO and ILO Healthy Workplace Framework and Model addresses psychosocial work-related stress as one of the most important opportunities for creating a conducive environment to promote workplace health and wellbeing (Lesener, et al., 2019).

Happiness is beneficial for the workplace as it makes the work-life healthier and the employee becomes more successful and socially engaged (Rippstein-Leuenberger, et al., 2017).

2.10 LEGAL AND ETHICAL FRAMEWORK

The maintenance of health, safety, and wellbeing of South African employees in the workforce are established in several legislative acts and regulations. OHNPs have a duty to be informed and to be up to date on relevant legislation that applies to their work environments (Acutt & Hattingh, 2016).

2.10.1 The Constitution of the Republic of South Africa, 1996

The Constitution of the Republic of South Africa, 1996, can be viewed as the "highest law", as it is a collection of the fundamental principles that govern the way the political system of a country abides by (Acutt & Hattingh, 2016).

Within chapter 2 of the constitution stands the "Bill of Rights," which affirms democratic values such as human dignity, equality, and freedom while embracing the rights of all persons in the country. In the context of Occupational Health, everyone has the right to an environment that is not hazardous to their health and wellbeing, and everyone has the right to intrinsic human dignity that is respected and maintained, according to the Bill of Rights, which coincides with the right to freedom and security. Human beings have the right to be free of all forms of violence, whether perpetrated by private or public sources, and they have the right not to be abused or punished/tortured in cruel, inhumane, or degrading ways.

2.10.2 The Occupational Health and Safety Act (no. 85 of 1993), as amended

The Occupational Health and Safety Act (no. 85 of 1993), as amended (OHSA), was created to protect the health and safety of people at work, including the employer, who employs or provides work for anyone for remuneration; and the employee, who is employed by or works for the employer and receives remuneration under the employer's supervision.

According to the OHSA, occupational health is defined as being free of disease or injury due to an occupational cause. Section 8 of the general duties of employers to their employees

stipulates that the employer must create and maintain a safe and healthy working environment for their employees.

Although organisations should be responsible for the health and safety of their employees, employees must take charge of their own and others' health and safety by following the correct precautions and rules set out by the employer concerning health and safety. Employees must immediately notify their safety representative of any risky working practices, injuries, or accidents.

2.10.3 Mines Health and Safety Act (29 of 1996)

The Mines Health and Safety Act (29 of 1996), MHSA, provides the legal framework that applies to employees and other persons at mines. It is aimed at providing for the protection of the health and safety of those applications.

The employer ensures safety by ensuring that the mining workplace is designed, constructed, and equipped, as far as reasonably practicable, to provide for safe operations that focus on conditions to ensure a healthy work environment that is safe and without risk to anyone's health while on the premises.

2.10.4 Basic Conditions of Employment Act (45 of 1965)

The Basic Conditions of Employment Act (45 of 1965) (BCEA) safeguards employers' and employees' health and well-being by enforcing the right to fair labour practices enshrined in section 23 of the constitution, as well as the provision and regulation of basic employment conditions namely working hours, leave, remuneration, and termination.

Under the BCEA are the codes of good practice with regards to working time, where the goal is to provide information and guidance to companies and employees regarding work schedules. This protects employees' health and well-being by enforcing strict rules to ensure that employees do not exceed maximum working hours without overtime pay unless special arrangements have been communicated and that employees receive a minimum of 12 hours between the end of one work shift and the start of the next work shift, as working hours have an impact on employees' health, safety, and family responsibilities.

2.11 SUMMARY OF CHAPTER TWO

This chapter described in detail what work-related stress is, and identified workplace psychosocial hazards. It looked at the standard and model that was followed in this research and how it affects health, together with suggestions on how to handle work-related stress. This included an overview of the WHO/ILO Healthy Workplace Model. An in-depth

explanation was provided on what OHNPs duties and roles are, and what causes work-related stress in nursing. The legal framework that was relevant to work stress was touched on.

Work-related stress is an occupational hazard that affects healthcare professionals physically with cardiovascular, metabolic and musculoskeletal disorders; psychologically with aggression, anger, sleep disturbances, low morale, inability to concentrate, fatigue and depression; and at the organisational level, increased absenteeism, and turnover.

CHAPTER THREE

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

This chapter provides an overview of all parts of the research design, techniques, and plans employed in this study to help achieve the specified research objectives, which were:

- To identify the work-related stress levels in OHNPs in the Gauteng Province.
- To describe the biographical and work-related factors which contribute to work-related stress among OHNPs in Gauteng Province.
- To determine the association between the work-related stress domains and biographical details of OHNPs in the Gauteng Province.

This chapter covers the research design and techniques, the context and setting of the study, population and sampling, data collection and process, data management, analysis, and stress evaluation, as well as ethical considerations.

3.2 RESEARCH DESIGN

A research design is the choice a researcher makes in order to plan the best way to answer a research question. This involves taking into consideration the study subjects (Gray, et al., 2017). This study adopted a quantitative cross-sectional design with the use of an online questionnaire method to explore work-related stress of OHNPs in Gauteng province.

Quantitative research's main objective is to provide accurate, dependable, and objective measurements that enable statistical analysis. It focuses on analysing complex issues that can be reduced to variables and numbers that can be calculated, quantified, and then summarised so that the researcher can draw conclusions about the subjects of their studies (Goertzen, 2017). Factual information was required to identify and describe work-related stress among OHNPs in Gauteng Province.

According to Zangirolami-Raimundo et al (2018:357) a cross sectional study can be described as an observation of variables at a single moment in time, analogously to the researcher taking a photograph of the variables of interest and not the movie of its evolution. Cross-sectional studies are useful in studying the prevalence of a phenomenon in research subjects (Zangirolami-Raimundo, et al., 2018). In this research, the data was collected between the months of April and August 2021, no follow up data was collected, and the data was gathered to determine the work-related stress among OHNPs in Gauteng Province.

A structured self-administered online questionnaire with items related to biographical details and factors relating to stressors in the workplace which followed the Likert style scale, which measured the domains of work-related stress according to the HSE-MSIT, was used in this research.

3.3 RESEARCH METHOD

Research methods are the techniques with which the researcher chooses to carry out their research within the chosen research design (Gray, et al., 2017). The research method provides the researcher with a guide on how to select the subjects; how to recruit and receive informed consent from participants; the setting (Gray, et al., 2017); techniques for data collection, namely surveys and interviews; sorting and analysing the data and making valid conclusions (Hammond & Wellington, 2013).

3.3.1 Motivation for the use of the Survey Method

To gather data from SASOHN members in Gauteng Province, the online survey approach was chosen and used in this research study. The benefit of utilising digital technology to distribute the research questionnaire was that it was able to reach a large number of participants online via their email on their laptops/computers, smartphones, and tablets. Digital questionnaires may be more acceptable when needing to respond to sensitive or uncomfortable questions. The structure of the research questionnaire on REDCap made answering the questionnaire on any electronic device simple. The research study was sent to SASOHN members via their respective Gauteng SASOHN Regions Chairperson's own email database.

3.3.2 Advantages and Disadvantages of the use of the Online Survey Method

There are advantages and disadvantages of using the online survey method. In this research, the participant received an email containing the participant information sheet and the hyperlink to the REDCap online questionnaire. The advantages of online surveys are that it is economically friendly in terms of time, money and travelling (Beerbaum, et al., 2018), as the researcher is able to design the questionnaire, write the invitation email with the survey hyperlink and send reminders digitally (Sue & Ritter, 2012). Online surveys ensure that data can be collected quickly; the researcher is able to create mandatory answers to ensure fewer unanswered questions (Beerbaum, et al., 2018). Online surveys also give participants the ability to close or delete the email if they do not wish to participate (Sue & Ritter, 2012).

The disadvantage of utilising online surveys for a targeted population is that the researcher may not have access to the database of potential participants, therefore, once emails have been dispersed, many email programs filter emails and flag any unsolicited or unapproved senders'

emails as junk mail, which results in many emails bouncing back (Sue & Ritter, 2012). Beerbaum et al. (2018) are of the opinion that participants may view the email as a nuisance, which lowers their motivation to complete the survey and could result in a low response rate. Additionally, the online survey method lacks rapport with the participant, and given online fraud and hacker incidents, respondents may be reluctant to take part in online surveys. It's also possible that the researcher is unaware that a participant has completed the questionnaire more than once (Beerbaum, et al., 2018).

This research study yielded a 98% response rate, however, if a participant completed the questionnaire multiple times, it may not have been noticed. According to the biographical information obtained, there were no obvious similarities between 2 or more responses, however, answering multiple times could not be ruled out completely.

3.4 THE CONTEXT AND SETTING OF THE RESEARCH

3.4.1 Context of the Research

The research was conducted within the four SASOHN regions in Gauteng Province in South Africa. These regions are known as Gauteng Central, Pretoria, West Rand, and the Vaal regions, which comprise 871 OHNPs registered with SASOHN. These Gauteng regions were chosen for the research as they were the target population for this research report.

3.4.2 Research Setting

A research setting is the location at which the data collection will take place (Gray, et al., 2017). The setting for this research was occupational health clinics at which SASOHN OHNP members practice within the Gauteng Central, Pretoria, West Rand, and Vaal regions of SASOHN in Gauteng Province. The research setting was not confined to a specific type of industry at which OHNPs were employed. OHNPs work in diverse industries, the research was open to all different types of work environments.

3.5 POPULATION

A population is defined as a particular group of persons that a researcher is interested in to form the focus of the study (Gray, et al., 2017). The target population was all OHNPs in Gauteng. It was not possible to include all OHNPs in South Africa for this study; thus, the accessible population was OHNPs who are members of SASOHN in Gauteng Province, to whom the study's findings can be applied (Houser, 2018). Upon enquiry from SASOHN, the target population of OHNPs in Gauteng is 871 SASOHN members, of whom 424 are members of Gauteng Central Region; 244 in Pretoria Region; 94 in West Rand Region and 109 in the Vaal Region.

3.6 THE SAMPLE AND SAMPLE SIZE

A sample is a subset of the accessible population that is selected using sampling methods to which the researcher will generalise the findings from a research study (Gaciu, 2020). The formula for sample size calculation of survey or cross-sectional study is given by:

$$N = \frac{Z^2 PQ}{D^2}$$

Where Z= Normal standard deviation at 80% power=1.96 and P= Prevalence rate of answers, Q=1-P and the margin of error D= 0.05, which measures the maximum amount by which the sample results differ from those of the actual results (Rumsey, 2016) and precision for a confidence interval of 95%. Due to there being minimal quantitative research studies with OHNPs in South Africa, we assume a prevalence of 93%. Therefore, P=93%=0.93. Hence sample size was:

$$N = \frac{1.96^2(0.93x0.07)}{0.05^2}$$

$\underline{N = 100}$, assuming the attrition rate of 5%= 5

Therefore, the minimum sample size was **<u>100 + 5 = 105</u>**

3.6.1 Sampling method

The type of sampling method chosen was a purposive sample, which is a non-probability, non-random sampling procedure that involves the researcher to consciously select certain subjects to be involved in the study (Gray, et al., 2017). This purposive sampling of selected participants according to the research purposes ensures that the sample is a representation of the population (Gaciu, 2020). This sample was drawn from the accessible population as the participants are the OHNPs who are members of SASOHN in the regions of Gauteng.

3.7 DATA COLLECTION

3.7.1 Choice of Measurement Instrument

According to Gray, Grove, and Sutherland (2017), biographical details, which are commonly referred to as demographic variables, are characteristics of a population studied to facilitate the description of the selected sample. The researcher developed a biographical questionnaire that included variables such as SASOHN region, gender, age, marital status, the highest level of education, type of current working industry and years of employment

Although there is no single questionnaire that is sufficient to assess all the dangers and hazards of work-related stress on its own (Cousins et al, 2004), the HSE-MSIT was able to

provide a suggestion of how well the workforce reflects their work-related stress relating to the six management standards, i.e. demands, control, support, relationships at work, role, and organisational change (Cousins et al, 2004).

3.7.2 Structure of the Self-Administered HSE-MSIT

The HSE-MSIT (Appendix G) is a 35-item questionnaire that focuses on six work-related stressors that are identified in the Management Standards for Work-Related Stress. It consists of 7 subscales with 35 items: demands (8); control (6); managerial support (5); peer support (4); relationships at work (4); role (5) and change (3).

The HSE-MSIT is designed on a five-point Likert Scale format to be able to determine the potential stress hazards using the 35 items: "Never/Strongly Disagree"; "Seldom/Disagree"; "Sometimes/Neutral"; "Often/Agree"; "Always/Strongly Agree". This tool is freely permitted for use and no permission from authors is required (Cousins et al, 2004).

3.7.3 Pre-testing the questionnaire

Pre-testing of the questionnaire involved conducting research as a smaller version of the main study with a similar research population and data collection methods aimed to determine if the methods are effective (Gray, et al., 2017). The pre-test involved individuals who were not involved in the main overall research study and was conducted on the final year postgraduate occupational health nursing students from the University of the Witwatersrand via email. One initial invitation and a reminder email to participate in the pre-test study via a hyperlink to the REDCap portal and to give feedback to the researcher about the time taken to complete the questionnaire, ease of access and understanding the questionnaire was sent to eight students, of which four students completed the questionnaire. This allowed the researcher to determine the time needed to complete the questionnaires and if there was any misunderstanding of any questions.

3.7.4 Reliability and validity of the research instrument

Cronbach's alpha coefficient was assessed to ensure the internal consistency of the instrument used. Reliability testing needed to be conducted before continuing with other statistical analyses. Cronbach's Alpha ranges from 0.00, which demonstrates no internal reliability and consistency, to 1.00, which shows perfect internal reliability with no measurement error whatsoever. However, all instruments have some measurement error, especially instruments that are done to assess complex human constructs such as mental health. Cronbach's alphas that are below 0.60 are seen to be of low instrument reliability, and it is advised that reliability is at a minimum of 0.70 (Gray, et al., 2017). The instrument has been proven reliable in South

Africa with a study that was conducted on public sector diagnostic radiographers in a district hospital in Durban, Kwazulu Natal (Gam, 2015). The six psychosocial indicators listed above have a solid foundation in the stress literature, therefore reflecting considerable content validity (Cassar, et al., 2018).

3.8 DATA COLLECTION PROCEDURE

Data collection was commenced in April 2021, immediately after receiving ethical clearance from the Human Research Ethics Committee (HREC; Medical) at the Health Sciences Faculty of the University of the Witwatersrand (Medical clearance no: MP201193) (Appendix A) and permission from the National SASOHN Education Representative (Appendix C & D). The researcher was not granted access to the SASOHN Gauteng email directory. SASOHN granted the researcher access to the four chairpersons of SASOHN Gauteng to collaborate with in forwarding emails from the researcher to their own respective OHNPs in their region. This included the weekly to biweekly reminder emails sent from the researcher to the SASOHN chairperson to be forwarded to their regions OHNPs. The data collection was completed in August 2021.

All OHNPs who were members of the SASOHN Gauteng directory were sent an email from their regional SASOHN chairperson with a link to an anonymous self-administered biographical questionnaire (Appendix F) and HSE-MSIT (Appendix G) on the Research Electronic Data Capture (REDCap) platform. The Data Collection Package contained an Information Leaflet (Appendix E), which included additional information, such as how to complete the questionnaire online.

The researcher and supervisor's telephone numbers and email addresses were included in the online package, should a participant have had any questions. The University of the Witwatersrand's REDCap electronic data capture technologies were used to collect and manage study data. REDCap is a safe and secure web-based platform for collecting data for research. (Harris et al, 2009, 2019)

Confidentiality and anonymity were assured as the questionnaire did not ask for any identifying information, and the data was kept in a secured, password-protected folder. They were assured that participation in the study was completely voluntary and that there were no penalties implemented if they were to withdraw or not participate.

Weekly to bi-weekly reminder emails were sent to all SASOHN regional chairpersons to distribute to their OHNPs to participate in the research study until adequate responses were recorded. A total of 10 reminder emails were sent, which took four months.

The researcher encountered problems with questionnaire distribution due to the uncertainty that all emails were sent on a weekly/bi-weekly basis from the SASOHN Chairpersons of each region. To solve the problem, the researcher contacted the Chairpersons whose areas were not responding and encouraged more emails to be sent. The researcher was unaware of the number of emails that were sent from the chairpersons and how many OHNPs received and opened the emails from their regional SASOHN chairperson.

3.9 DATA MANAGEMENT AND ANALYSIS

The questionnaire required participants to respond using the Likert Scale. For ease of analysing and reporting the results, sections of the Likert scale were collapsed into the following responses, namely Strongly Disagree/Disagree/Never/Seldom and Agree/Strongly Agree/Often/Always. The overall scoring and data analysis was not affected by the amalgamation as all the data from the different responses were totalled to make one percentage.

3.9.1 Data Management

Research data management involves the process of finding, organising, storing, sharing and preserving intellectual property securely and effectively (Cox & Verbaan, 2018).

The responses to the REDCap questionnaires were received and reviewed to ensure completeness. One hundred and forty questionnaires had been opened; however, only 103 were completed. Incomplete and partially completed questionnaires were discarded, and each response was allocated a Participant ID. The collected data from the HSE-MSIT were exported into a Microsoft Excel spreadsheet, and all data were categorised according to constructed variables of work-related stress that were identified in the Management Standards for Work-Related Stress, such as demands; control; managerial support; peer support; relationships at work; role and change (Cousins et al, 2004).

Data cleaning processes included checking for duplicates, missing values, re-coding and categorising variables. This was a quality assurance process.

The researcher sought the assistance of a statistician to assist with statistical and analytical services, and the raw data was then imported into STATA Version 15 (Stata Corp 2017) for further analysis. All raw data is kept in a password protected folder.

3.9.2 Statistical Analysis

Reliability of the overall research study was tested using the coefficient of reliability, Cronbach Alpha. When the coefficient was 0.80 or higher, it was considered to be very

reliable; when the coefficient was between 0.6-0.80, it was deemed to be reliable (Ahdika, 2017).

Descriptive statistics were used to summarise the characteristics of the OHNP sample, categorical variables namely genders, the highest level of education, working industry and were presented as frequencies and percentages. The continuous variables, such as the age and years of employment, were presented as mean and standard deviation or median and inter-quartile range (if not normally distributed).

Responses from the participants in the HSE-MSIT were all interpreted utilising descriptive statistics. Frequency distribution and cross tables were used to describe and understand the overall characteristics of the data obtained.

Inferential statistics were used to compare the similarities and differences between the OHNPs of different genders, ages, the highest level of education, working industry and years of work experience.

Associations between the categorical data were assessed using Pearson's Chi-Square or Fisher's exact test. Correlational significance was evaluated using Pearson's Correlation in rattle software R.

To be able to compare the different categories, proportions and percentages were used to summarise the categorical variables. The summary of continuous variables used the mean and the standard deviation, or median, with inter-quartile ranges. Graphs were generated. All statistical tests analyses were two-sided, and p values ≤ 0.05 were statistically significant.

3.10 Approach to Data Analysis

Pearson's product-moment correlation (r) is a parametric statistical test that uses correlational analysis of a linear relationship to determine the strength between two concepts, which implies that if two concepts are related and there is a variation in one that is influenced by a variation in another, then we can say they are either positively or negatively correlated. The correlation coefficient (r) represents a calculated value that lies between +1 to -1; if the value is calculated as "0", then there is no relationship between the variables. The closer the value is to either +1 or -1 signifies that there is a strong relationship between the two variables; if the value is close to +1, then the two variables are proportionate to one another; reversely, if the value is closer to -1, then the two variables have a strong inversely proportional relationship to one another. This means that if the two variables have a positive correlation when one

increases, the other increases, whereas in a negative correlation situation, when one variable increases, the second variable decreases (Gray, et al., 2017).

Pearson's Chi-Squared Test (χ^2) is a non-parametric statistical test that measures proportions between variables in the category of interest. It compares two variables at an ordinal or nominal level to see if there is a significant difference in the observed frequencies from what would have been expected (Gray, et al., 2017). The Pearson's Chi-squared test (χ^2) is measured on large samples, whereas the Fishers exact test is more frequently used on smaller samples and where there us unequal numbers in a category which would make accuracy a concern. The Fischer's Exact test adjusts the chi-squared where the Chi-Squared test would be inappropriate. The Fischer's Exact test analyses dichotomous independent and dependent data to examine whether the populations in each data category differ from each other (Pett, 2016).

Statistically, a significant association was set at P-value ≤ 0.05. This allows the researcher a 5% or lower probability of executing a Type I Error when the data rejects a false-positive finding when it is, in fact, true (Gray, et al., 2017).

3.11 ETHICAL CONSIDERATIONS

Ethical clearance was guided by the South African Medical Research Council's Guidelines on Responsible Conduct of Research (Nevhutalu, 2017) and obtained from the Human Research Ethics Committee (HREC; Medical) at the Health Science Faculty of the University of the Witwatersrand. (Medical Clearance no: MP201193) (Appendix A)

OHNPs were invited to participate in the study after receiving an Information leaflet (Appendix E), which provides an explanation of the nature and purpose of the study, how to participate, the expected duration of completing the questionnaire and the steps taken to ensure anonymity and confidentiality. Confidentiality and anonymity were guaranteed as the questionnaire did not ask for any identifying information, and the data was kept in a secured, password-protected folder. They were assured that participation in the study was completely voluntary and that there were no penalties implemented if they were to withdraw or not participate.

The contact information and credentials of the researcher and supervisor were listed should the participant have had any queries.

3.11.1 Permission to Conduct Research

The University of the Witwatersrand Human Research Ethics Committee (Medical) (Appendix A), School of Therapeutic Sciences (Appendix B) and the South African Society of Occupational Health Nurses (Appendix C & D) were both approached for permission to perform the study.

3.11.2 Informed consent

Participation was completely voluntary. Voluntary consent is when a participant decides to proceed with the research study questionnaire and completing it within their own volition without any coercion or intimidation (Gray, et al., 2017), Before submitting the online questionnaire, the participant had the right and freedom to withdraw from the study without penalty.

3.11.3 Confidentiality and anonymity

The participant's right to anonymity and confidentiality was ensured by the following measures: the questionnaire did not require an individual's name, identity number or telephone number; the data obtained was kept in a safe password-secured folder that only the researcher and supervisor had access to; only grouped data was utilised in the research report.

3.12 SUMMARY OF CHAPTER THREE

This chapter provided an overview of all the aspects that the researcher took into consideration to achieve the proposed research objectives. A description of the population and the calculation of the sample were given. The planning phase of the research study was mapped out in the research design and methods section, and the data collection instrument and data collection procedure were explained in detail. Permissions and ethical considerations were respected.

The following chapter presents the results and a discussion of the data that were received from the data collection procedure.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter is dedicated to presenting and discussing the data. The results are represented in tables, figures, graphs, and narratives. The profile of participants from the biographical questionnaire is the first to be presented. Variables that could contribute to stress have been divided into their subheadings of demands, control, managerial support, peer support, relationships, role, and change.

To achieve the purpose of the research, the following research objectives needed to be determined:

- To identify the work-related stress levels in OHNPs in the Gauteng Province.
- To describe the biographical and work-related factors that contribute to work-related stress among OHNPs in Gauteng Province.
- To determine the association between the work-related stress domains and biographical details of OHNPs in the Gauteng Province

4.2 RESPONSE RATE

Overall, it was difficult to assess how many questionnaires were sent out over email via the different SASOHN regions databases; however, it was concluded that 140 REDCap questionnaires were opened by participants, 37 of them were not attempted or were partially attempted, and the total amount of completed questionnaires on REDCap was counted as 103. The sample size calculated to achieve a confidence interval of 95% with a margin of error of 5% was 105; therefore, the response rate associated with the sample size was 98%. **Figure 4.1** below depicts the response rate per SASOHN Gauteng Province regions.

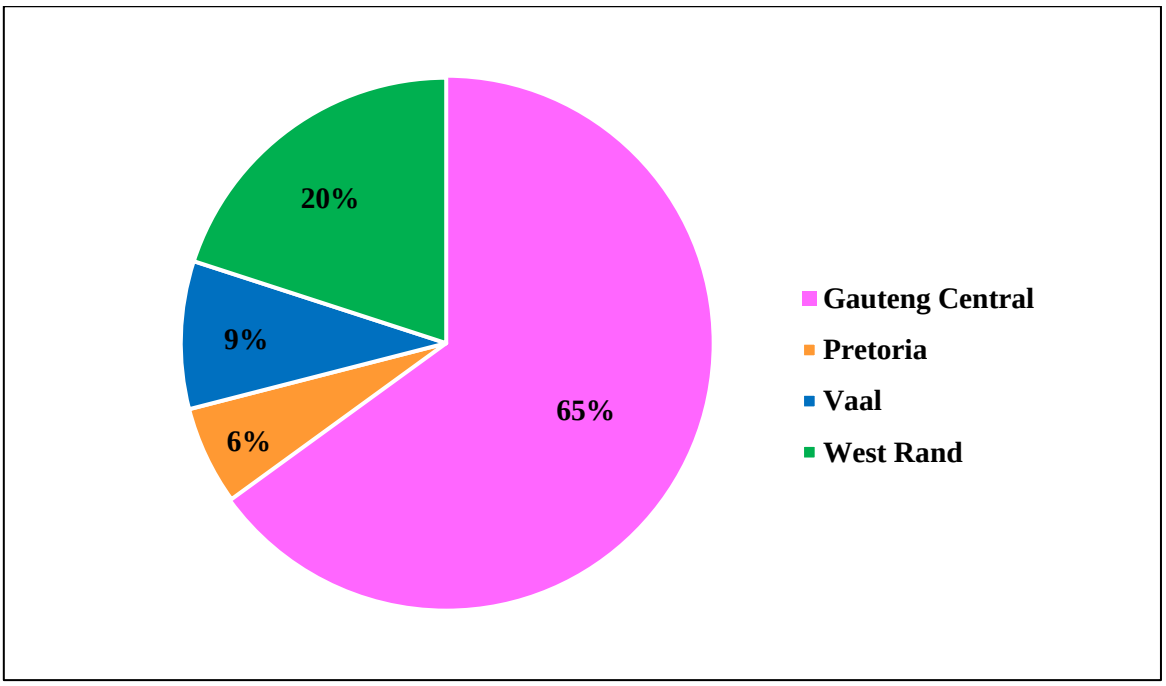


Figure 4.1 Response Rate per SASOHN Regions in Gauteng Province

Figure 4.1 reflects that the majority of the responses to the research study were affiliated with Gauteng Central Region (n=67, 65%) and West Rand Region (n=21, 20%), followed by Vaal Region (n=9, 9%) and Pretoria Region (n=6, 6%).

4.3 BIOGRAPHICAL QUESTIONNAIRE RESULTS

This section presents the biographical information that was obtained during the research process. It comprises gender, age, marital status, highest education level, type of industry currently employed and duration of current employment.

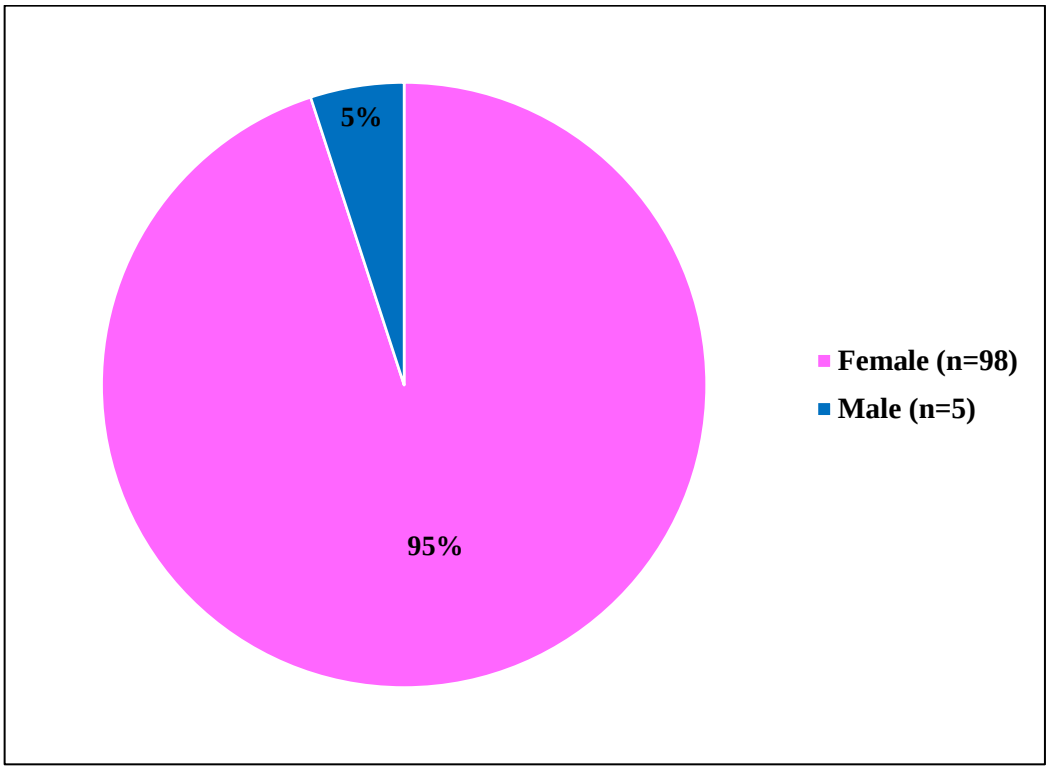


Figure 4.2: Gender

Figure 4.2 reveals that 95% (n=98) of the OHNPs who participated were female, whilst 5% (n=5) were males.

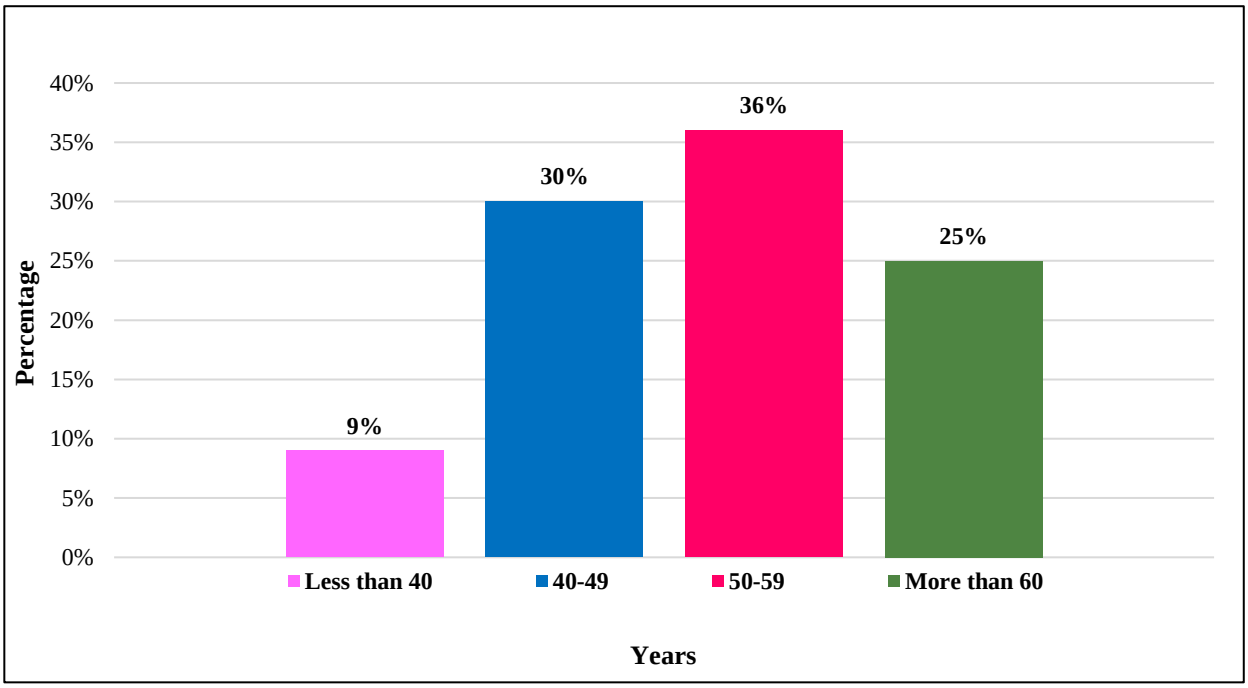


Figure 4.3: Age distribution of participants

Figure 4.3 shows the majority of participating OHNPs were between 50-59 years of age (n=37, 36%), followed by 40-49 years (n=31, 30%), more than 60 years (n=26, 25%), and less than 40 years (n=9, 9%), the mean age of participants was 52 years, with a standard deviation of 9.25. The minimum age was 28 years, and the maximum age was 70 years.

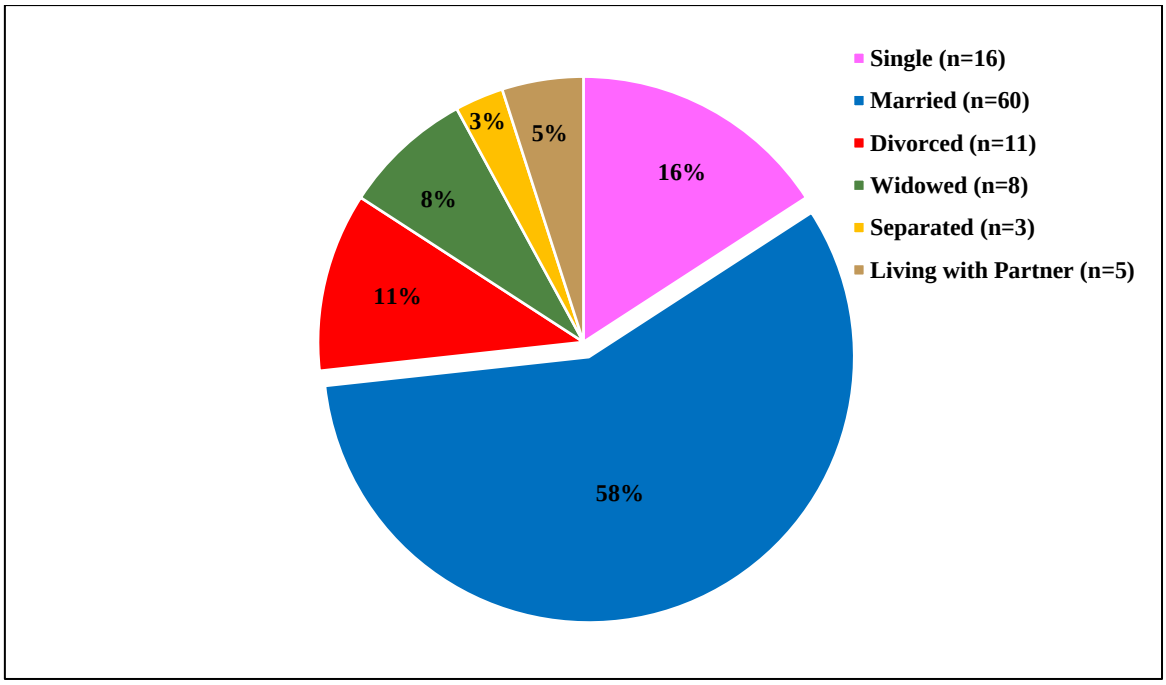


Figure 4.4 Marital Status

Figure 4.4 shows that majority of the OHNPs 58% (n=60) are married, 16% (n=16) are single, 11% (n=11) are divorced, 8% (n=8) are widowed, 5% (n=5) are living with their partner and 3% (n=3) are separated.

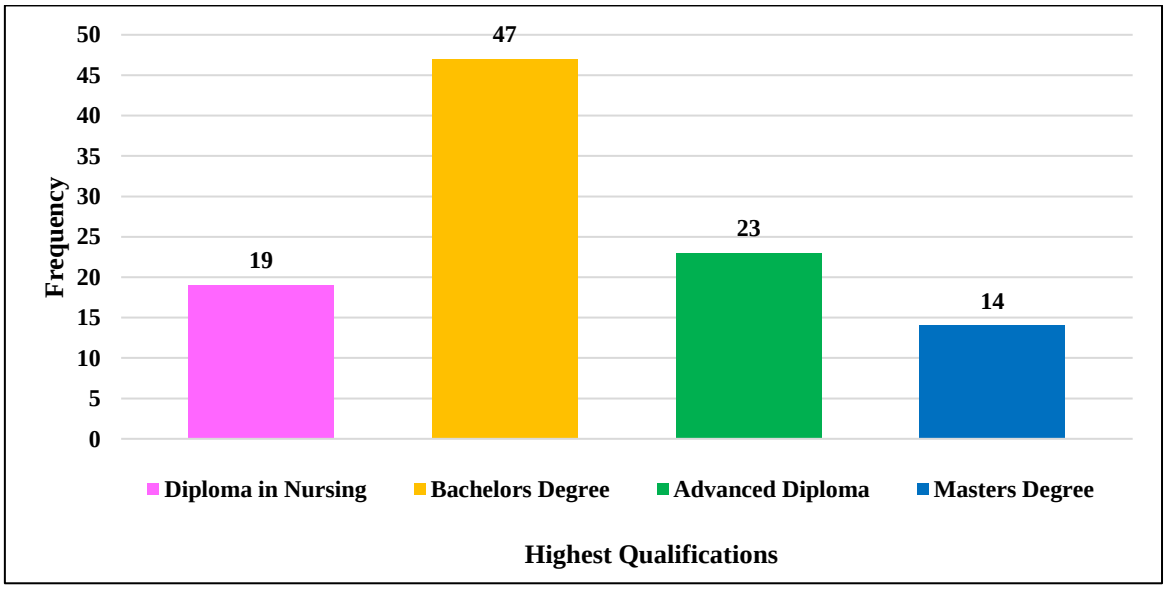


Figure 4.5 Highest Qualifications

Figure 4.5 shows that most OHNPs in the research study obtained their bachelor's degree (n=47, 46%), followed by an advanced diploma (n=23, 22%), diploma in nursing (n=19, 18%) and master's degree (n=14, 14%). From this study it is noted that the females who had their master's degrees were in the age range of 31-60 years, and they made up 14% of this study.

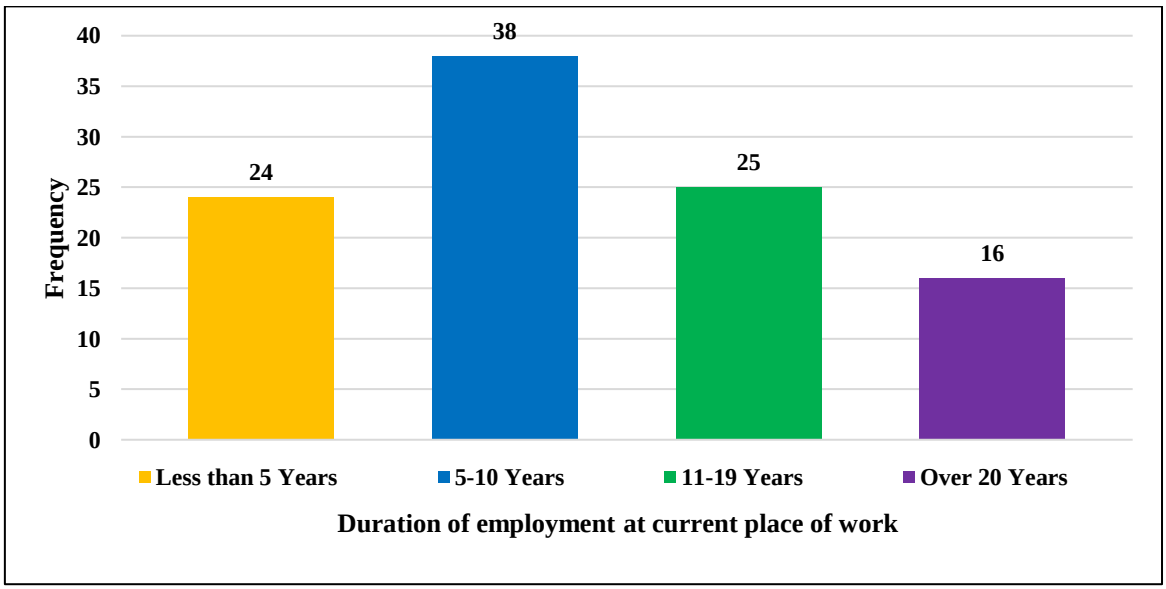


Figure 4.6: Years of employment the OHNPs currently work in

Figure 4.6 shows the OHNPs years of employment in their current job at the time of the research. The majority of OHNPs have been working at their current job for 5-10 years (n=38,

37%), followed by 11-19 years (n=25, 24%), less than five years (n=24, 23%) and the minority of OHNPs have worked for over 20 years (n=16, 16%). This shows that the majority of participants had less than 20 years of employment, with the median years being eight years with a range of 5-15 years. The minimum years of employment was one year, and the maximum years of employment was 39 years. One participant who was in the 56-60 year age group had 39 years in their current workplace.

Figure 4.7 below depicts the type of industries that the OHNPs were working in at the time of the research study.

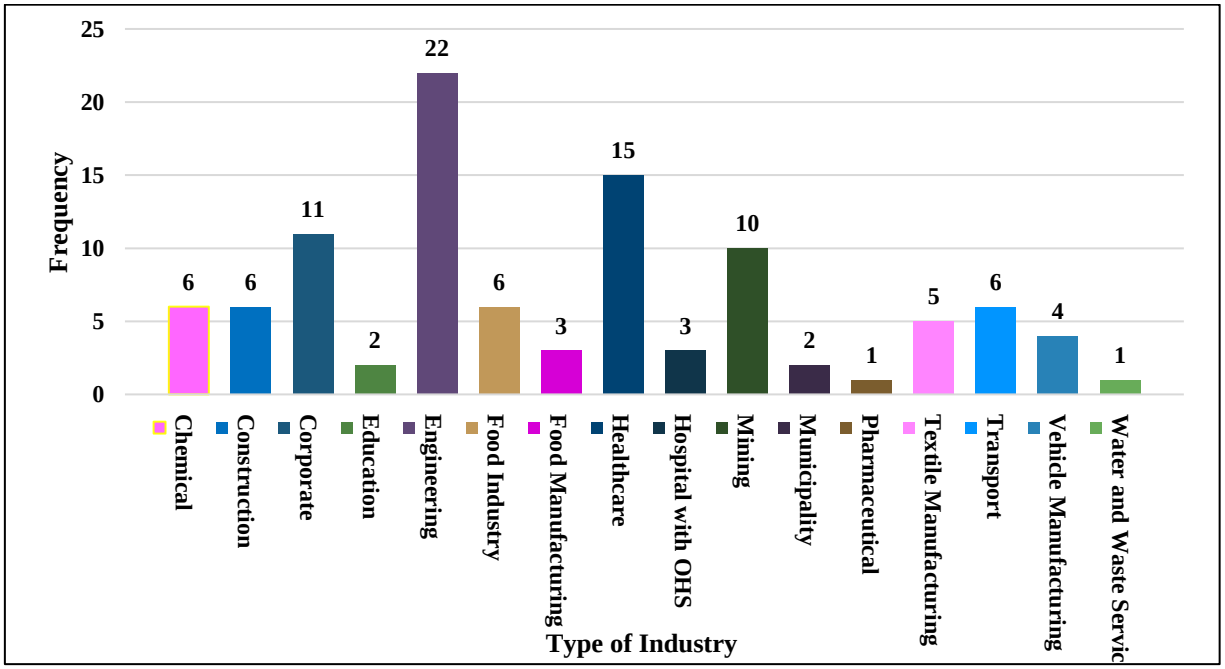


Figure 4.7: The Industries that OHNPs currently work in

Figure 4.7 shows the type of industries the OHNPs were working in at the time of the research study. Majority of OHNPs work in the Engineering industry (n=22, 21%), Healthcare (n=15, 15%), Corporate (n=11, 11%) and Mining (n=10, 10%), with the minority of participants working in Education (n=2, 2%), Municipalities (n=2, 2%) , Pharmaceutical (n=1, 1%) and Water and Waste Services (n=1, 1%)

4.4 THE HEALTH AND SAFETY EXECUTIVE MANAGEMENT STANDARDS INDICATOR TOOL RESULTS

The results that are presented in this section are sorted according to the different variables of work-related stress.

4.4.1 Cronbach Alpha

Table 4.1 below reflects the results that were calculated using Cronbach alpha coefficients; this tests the reliability of the HSE-MSIT and its seven subscales. The overall Cronbach Alpha of this research was shown to be α=.96. Each subscale was tested individually with demands: α=.87; control: α=.82; managerial support: α=.84; peer support: α=.78; relationships: α=.85; role: α=.83 and change: α=.72. Edwards et al (2008) reliability of the HSE-MSIT showed demands (α=.87); control (α=.82); Support (managerial support (α=.88); peer support (α=.82)); relationships at work (α=.78); role (α=.83), and change (α=.80). The overall Cronbach alpha coefficient was α=0.96 compared to Edwards et al. (2008), which was α=.92, which indicates that this research study using the HSE-MSIT was reliable.

Table 4.1 Cronbach Alpha scores obtained in this research study compared to Edwards et al. (2008)

Variable	Actual Cronbach Alpha	Edwards et al. (2008)
Demands	α=0.87	α=0.87
Control	α=0.82	α=0.82
Relationships	α=0.85	α=0.78
Role	α=0.83	α=0.83
Change	α=0.72	α=0.80
Managerial Support	α=0.84	α=0.88
Peer Support	α=0.78	α=0.82
Overall	α=0.96	α=0.92

4.4.2 Demands

The reliability co-efficient of demands which constituted eight questions, was very reliable (α=0.87) (Ahdika, 2017).

As shown in Table 4.2 below, a significant proportion of the participants agreed that they do not have to work very intensively (64%, n=66) or very fast (48%, n=49); however, a significant number of OHNPs have unachievable deadlines (53%, n=55); with unrealistic time pressures (50%, n=52); are pressured into working long hours (50%, n=51); and are not able

to take sufficient breaks (42%, n=43). While a third of the participants often or sometimes had to neglect tasks because there was too much to do (36%, n=37).

SASOHN region had a significant relationship (p=0.04) with the Gauteng Central Region participants being the least stressed (n=22; p=0.02) in terms of demands. In this research 44% of the OHNPs below the age of 40 and 27% over the age of 60 experienced stress. It was also recognised that 37.5% of widowed OHNPs were experiencing stress with the demands at work compared to 12.5% of single OHNPs. The majority of participants found that they always or sometimes had unachievable deadlines with unrealistic time pressures to complete allocated tasks (r=0.532, p<0.00), additionally, OHNPs found themselves having to neglect tasks due to time constraints (r=0.513, p<0.00). Furthermore, OHNPs are pressured into working longer hours to complete tasks due to the fact that there are unrealistic time pressures (r=0.603, p<0.00). The OHNPs who experienced difficulty in being able to take a break furthermore had trouble completing tasks, therefore having to neglect some tasks due to there being too many duties that needed to be completed (r=0.5151, p<0.00). OHNPs who felt that they had to work very intensively were pressured into working long hours (r=0.5018, p<0.00) and had to work very fast (r=0.6651, p<0.00).
There is a positive correlation between" I have to neglect some tasks because I have too much to do" and "Staff are always consulted about change at work" (r=0.4499, p<0.00), OHNPs may have to neglect some of their tasks, due to the fact that when organisations implement changes, it may add additional work duties and tasks to the OHNPs workload.

A proportion of participants agreed that they would receive help and support from their colleagues when they had unachievable deadlines (r=0.359, p<0.00) and they felt supported by their manager when they were experiencing emotionally demanding work (r=0.351, p<0.00) and some thought that their manager encouraged them at work (r=0.309, p<0.00).

There were significant positive correlations between OHNPs responses to "I have unrealistic time pressures" and "I am subjected to personal harassment in the form of unkind words or behaviour" (r=0.396, p<0.00), "there is friction or anger between colleagues "(r=0.473, p<0.00), "I am subject to bullying" (r=0.415, p<0.00) and "relationships at work are strained" (r=0.466, p<0.00). OHNPs who reported that there was friction or anger between colleagues were pressured to work long hours (r=0.471, p<0.00).

Table 4.2 Responses (%) to items related to demands

Item	Statement	Total	Often/Always		Sometimes		Never/Seldom	
			n	%	n	%	n	%
3	Different groups at work demand things from me that are hard to combine	103	24	23%	34	33%	45	**43%**
6	I have unachievable deadlines	103	55	**53%**	35	34%	13	13%
9	I have to work very intensively	103	9	9%	28	27%	66	**64%**
12	I have to neglect some tasks because I have too much to do	103	37	**36%**	37	**36%**	29	28%
16	I am unable to take sufficient breaks	103	43	**42%**	25	24%	35	34%
18	I am pressured to work long hours	103	51	**50%**	26	25%	26	25%
20	I have to work very fast	103	16	15%	38	37%	49	**48%**
22	I have unrealistic time pressures	103	52	**50%**	34	33%	17	16%

4.4.3 Control

The reliability co-efficient of control which constituted six questions, was very reliable (α=0.82) (Ahdika, 2017).

As shown in Table 4.3 below, a considerable proportion of the participants agreed that they had some say over the way they work (79%, n=81); could decide when to take a break (71%, n=73) and had a choice in deciding how to work (70%, n=72). With regards to how participants had control over what they did at work, the response was 50% (n=51) agreed, whilst 26% (n=27) and 24% (n=25) felt that they sometimes, seldom, or never had a choice, respectively.

Age was noted to be a significant factor with regards to control ($p<0.00$), it was noted that 33% (n=3, $p<0.00$) of the OHNPs who were under the age of 40 were vulnerable to stress caused by lack of control, whilst 85% (n=22) of OHNPs who were above the age of 60 were excelling in control. Education was also noted to be significant ($p<0.00$), with 94% of OHNPs with a diploma in nursing (n=18, $p<0.00$) and 70% of OHNPs with a bachelor's degree (n=33, $p=0.04$) are coping extremely well in control. All other biographical variables were not significant.

OHNPs had some say over the way they worked, namely having a choice in how they do their work ($r=0.312$, $p<0.00$) and what they do at work ($r=0.356$, $p<0.00$). Similarly, an OHNPs

ability to decide when they could take a break correlates with their capacity to determine what (r=0.537, p<0.00) and how (r=0.502, p<0.00) they do their work.

OHNPs who understand the goals and objectives in their department have the ability to have a say in their own work speed (r=0.416, p<0.00), a choice in deciding how they do their work (r=0.386, p<0.00) and when to take a break (r=0.372, p<0.00). Responses to "I have a say in my own work speed" have had positive correlations to items in management support, namely, "my manager encourages me at work" (r=0.454, p<0.00); "I am supported through emotionally demanding work" (r=0.435, p<0.00) and "I can talk to my manager about something that has upset or annoyed me about work" (r=0.425, p<0.00).

Table 4.3 Responses (%) to items related to control

Item	Statement	Total	Often/Always; Strongly Agree/Agree		Sometimes; Neutral		Never/Seldom; Disagree/Strongly Disagree	
			n	%	n	%	n	%
2	I can decide when to take a break	103	73	**71%**	20	19%	10	10%
10	I have a say in my own work speed	103	68	**67%**	23	22%	12	11%
15	I have a choice in deciding how I do my work	103	72	**70%**	20	19%	11	11%
19	I have a choice in deciding what I do at work	103	51	**50%**	27	26%	25	24%
25	I have some say over the way I work	103	81	**79%**	14	13%	8	8%
30	My working time can be flexible	103	60	**58%**	16	16%	27	26%

4.4.4 Managerial Support

The reliability co-efficient of Managerial Support, which constitutes five questions, was very reliable (α=0.84) (Ahdika, 2017).

As shown in Table 4.4, only 62% (n=64) of the OHNPs agreed that they could talk to their manager about something that has upset or annoyed them about work, with 58% (n=39) feeling that they were supported through emotionally demanding work. Half of OHNPs (53%, n=55) agreed that their manager encourages them at work, whilst 40% (n=41) are given supportive feedback on the work that they are doing, only 38% (n=39) could rely on their work manager to help them with a problem.

According to the overall results it was noted that 25% (n=26) of OHNPs were stressed with regards to managerial support, 32% (n=7) of the OHNPs working in the engineering field (n=22), were regarded as most stressed out of all the different industries.

The correlations with regards to management support were consistently within the higher ranges. There were high correlations between how the OHNPs managers encouraged them and how the OHNPs felt that they were supported during emotionally demanding work ($r=0.625$, $p<0.00$); were given supportive feedback on the work that they were doing ($r=0.583$, $p<0.00$); could talk to their manager about something that had upset or annoyed them about work ($r=0.556$, $p<0.00$) and that they could rely on their manager to help them with a work-related problem ($r=0.516$, $p<0.00$).

There were strong positive correlations between OHNPs who reported that they could speak to their manager about something that had upset or annoyed them about work, their working times were flexible ($r=0.531$, $p<0.00$) they had sufficient opportunities to question managers about change at work ($r=0.539$, $p<0.00$) and when changes were made at work, the OHNP was clear about how it would work out in practice ($r=0.441$, $p<0.00$).

Table 4.4 Responses (%) to items related to Managerial Support

Item	Statement	Total	Often/Always; Strongly Agree/Agree		Sometimes; Neutral		Never/Seldom; Disagree/Strongly Disagree	
			n	%	n	%	n	%
8	I am given supportive feedback on the work I do	103	41	**40%**	26	25%	36	35%
23	I can rely on my manager to help me out with a work problem	103	39	**38%**	31	30%	33	32%
29	I can talk to my manager about something that has upset or annoyed me about work	103	64	**62%**	26	25%	13	13%
33	I am supported through emotionally demanding work	103	39	**58%**	20	16%	44	26%
35	My manager encourages me at work	103	55	**53%**	27	26%	21	20%

4.4.5 Peer Support

The reliability co-efficient of Peer Support, which constitutes four questions, was considered reliable (α=0.78) (Ahdika, 2017). According to Table 4.5, a significant proportion of OHNPs agreed that they received the respect they deserved from their colleagues (n=71, 69%), Over half of OHNPs agreed that their work colleagues were willing to listen to their work-related problems (59%, n=61)) and that they are able to get help and support from their colleagues (64%, n=66). However, according to Table 4.5a, it appears that when work gets difficult for the OHNP, only 39% (n=40) agreed that their colleagues would help them, while 32% (n=33) disagreed.

It should be noted that the respect that OHNPs receive at work is significantly correlated with the OHNP receiving the help and support that they need from colleagues (r=0.559, p<0.00) and how their colleagues were willing to listen to their work-related problems (r=0.575, p<0.00). When the OHNPs work becomes difficult, and their colleagues would help them, it had a high positive correlation with how they received the help and support of their colleagues (r=0.582, p<0.00).

Table 4.5 Responses (%) to items related to Peer Support

Item	Statement	Total	Often/Always; Strongly Agree/Agree		Sometimes; Neutral		Never/Seldom; Disagree/Strongly Disagree	
			n	%	n	%	n	%
7	If work gets difficult, my colleagues will help me	103	40	**39%**	30	**29%**	33	**32%**
24	I get help and support I need from colleagues	103	66	**64%**	28	27%	9	9%
27	I receive the respect at work I deserve from my colleagues	103	71	**69%**	19	18%	13	13%
31	My colleagues are willing to listen to my work-related problems	103	61	**59%**	34	33%	8	8%

4.4.6 Relationships at Work

The reliability co-efficient of relationships at work, which constituted four questions, was considered to be very reliable (α=0.85) (Ahdika, 2017). Table 4.6 below shows that a large number of OHNPs (72%) reported that they were not bullied at work; over half (57%) felt that they were not subjected to personal harassment in the form of unkind words or behaviour and

(55%) indicated that there was no friction or anger between colleagues and 49% agreed that the relationships at work were not strained.

However, bullying in the occupational health nursing environment is of great concern, as nine percent of OHNPs (n=9) indicated that they were often or always subjected to bullying at work and that 19% (n=20) were sometimes bullied at work. OHNPs who were constantly subjected to personal harassment and unkind words was 15% (n=15), whilst 28% (n=29) reported that they were sometimes subjected to harassment and unkind words at their workplaces.

It was noted that there was an equal distribution of answers of OHNPs under the age of 40 years, i.e. 33% were most stressed, 33% were neutral, and 33% were least stressed with relationships at work. The OHNPs that were between the ages of 50-59 (76%) and over the age of 60 (73%) were least stressed with regards to relationships; however 16% of OHNPs who were between the ages of 40-49 were experiencing relationship stress.

The marital status of an OHNP is relevant in relationships at work; OHNPs that were experiencing the least stress were those who were married (59%) compared to those who were single (14%) or divorced (12%). Furthermore, an OHNPs highest level of education and relationships at work was statistically significant (p=0.02); those with a higher degree made up 52% of the OHNPs that were the least stressed, whereas 40% of the OHNPs that were most stressed had advanced diplomas.

Bullying at work of OHNPs is of concern as 28% (n=29) of OHNPs reported that they are always, often, or sometimes bullied. The majority OHNPs who were above 40 years and below 60 years of age said that they are always, often, or sometimes bullied is 72.4% (n=21), whilst 17.2% (n=5) of those OHNPs who reported bullying are below 40 years of age, and 10.3% (n=3) are above 60 years of age.

Table 4.6 Responses (%) to items related to Relationships at work

Item	Statement	Total	Often/Always; Strongly Agree/Agree		Sometimes; Neutral		Never/Seldom; Disagree/Strongly Disagree	
			n	%	n	%	n	%
5	I am subject to personal harassment in the form of unkind words or behaviour	103	15	15%	29	28%	59	**57%**
14	There is friction or anger between colleagues	103	10	10%	36	35%	57	**55%**
21	I am subject to bullying at work	103	9	9%	20	19%	74	**72%**
34	Relationships at work are strained	103	24	23%	29	28%	50	**49%**

There is a direct positive correlational relationship seen between bullying at work and OHNPs being subjected to personal harassment in the form of unkind words or behaviour ($r=0.688$, $p<0.00$), OHNPs who felt that there was friction or anger between colleagues ($r=0.603$, $p<0.00$) and OHNPs who indicated that relationships at work were strained ($r=0.578$, $p<0.00$).

4.4.7 Role

The reliability co-efficient of role, which constituted five questions, was considered very reliable ($\alpha=0.83$) (Ahdika, 2017). As presented in Table 4.7, 83% to 97% of OHNPs responded positively to all aspects relating to role. OHNPs understood what the goals and objectives in their department were (83%), were clear about what their duties and responsibilities were (89%), knew what is expected of them from their work (89%) and knew how to get their job done (97%). The majority of OHNPs (84%) understood how their work fits into the organisation's overall aim.

A small number of OHNPs were sometimes, seldom, or never clear about the goals and objectives in their department (17%); furthermore 16% of OHNPs sometimes, seldom, or never understood how their work fitted into the overall aim of the organisation.

There was a strong positive correlation when OHNPs were clear of their duties and responsibilities were in their department with them knowing how to get their job done ($r=0.564$, $p<0.00$) and they understood what was expected of them at work ($r= 0.549$, $p<0.00$). When OHNPs were clear about what their duties and responsibilities were, they were also able to value their goals and objectives in their department ($r=0.551$, $p<0.00$) and were able to understand how their work fits into the overall aim of the organisation ($r=0.497$, $p<0.00$).

Table 4.7 Responses (%) to items related to Role at Work

Item	Statement	Total	Often/Always		Sometimes		Never/Seldom	
			n	%	n	%	n	%
1	I am clear what is expected of me at work	103	92	**89%**	8	8%	3	3%
4	I know how to go about getting my job done	103	100	**97%**	2	2%	1	1%
11	I am clear what my duties and responsibilities are	103	92	**89%**	7	7%	4	4%
13	I am clear about the goals and objectives for my department	103	86	**83%**	10	10%	7	7%
17	I understand how my work fits into the overall aim of the organisation	103	87	**84%**	12	12%	4	4%

4.4.8 Change

The reliability co-efficient of change, which constituted three questions, was considered reliable (α=0.72) (Ahdika, 2017). As presented in Table 4.8 below, the results for this variable was not very significant; over half (54%, n=56) of the OHNPs understood how changes at work would be incorporated into their practices; however, only 35%(n=36) agreed that the staff was always consulted about the changes at work, whilst, 45% (n=46) of OHNPs agreed that they were able to speak to their managers about any questions they had about any changes at work.

The years of current experience an OHNP had at their workplace indicated that the least stressed OHNPs in regard to change was 44% (n=11) of those who had been at their workplace for 11-19 years, 43.8% (n=7) of OHNPs with more than 20 years, 33.3% (n=8) of OHNPs with less than five years and 31.6% (n=12) of OHNPs who had 5-10 years of experience at their current workplace were the least stressed.

A third (n=34) of OHNPs disagreed that staff were consulted about changes at work, whilst 35% (n=36) agreed, and 32% (n=33) were neutral. The OHNPs who had been working for an organisation for more than 20 years who were stressed was only 6.3% (n=1), whilst those who had been working between 5-10 years was 26.3% (n=10) and less than five years 20.9% (n=5).

Positive correlations were maintained when OHNPs were consulted about changes at work, and the changes were implemented. OHNPs understood how they would work out in their practice ($r=0.526$, $p<0.00$). If the OHNP had sufficient opportunities to question their

managers about the changes at work, then the OHNP would know how the changes would work out in practice (r=0.480, p<0.00).

A significant number of positive correlations relating to change were from the managerial support variable. When OHNPs reported that they had sufficient opportunities to question their manager about changes at work, they could also rely on their manager to help them out with a work-related problem (r=0.353, p<0.00). Their managers supported the OHNP through emotionally demanding work (r=0.496, p<0.00) and the manager encouraged the OHNP at work (r=0.449, p<0.00).

OHNPs who felt that when changes were made at their work, and they were clear with how they would work out in practice, felt that they had unrealistic time pressures (r=0.441, p<0.00), and had unachievable deadlines (r=0.367, p<0.00), however, they were clear about the goals and objectives for their departments (r=0375, p<0.00), were clear of what was expected of them (r=0.364, p<0.00) and understood how their work fitted into the overall aim of the organisation (r=0.357, p<0.00).

Additionally, when changes were made at work, and the OHNP was clear about how they would work out in practice, they received help and support from their colleagues (r=0.548, p<0.00), and their colleagues were willing to listen to their work-related problems (r=0.454, p<0.00).

Table 4.8 Responses (%) to items related to change

Item	Statement	Total	Strongly Agree/Agree		Neutral		Disagree/Strongly Disagree	
			n	%	n	%	n	%
26	I have sufficient opportunities to question managers about change at work	103	46	**45%**	32	31%	25	24%
28	Staff are always consulted about change at work	103	36	**35%**	33	**32%**	34	**33%**
32	When changes are made at work, I am clear how they will work out in practice	103	56	**54%**	28	27%	19	18%

4.5 DISCUSSION OF RESULTS: BIOGRAPHICAL PROFILE OF THE PARTICIPANTS

4.5.1 Response Rate

The purpose of this research was to investigate the contributing factors and levels of work-related stress among Occupational Health Nurse Practitioners in the Gauteng province. A total response rate of 98% (n=103) was achieved in this study for an online self-administered questionnaire; this is seen as a high response rate according to Alberts (2015).

4.5.2 Gender

In 2021, the South African Nursing Council (SANC) published the statistical data of registrations and listed qualifications for 2020. In 2020, SANC recorded a total of 280,631 registered nurses/midwives, of which 251,490 (90%) were females and 29,141 (10%) were males. Professional nurses who had the post-basic qualification in occupational health nursing in 2021 were 3969 (89%) females, and 492 (11%) males. (South African Nursing Council, 2021).

Alberts (2015), who completed a research study on the "Job satisfaction of Occupational Health Nurses at a private occupational health service provider in South Africa", found that the majority of participants were 88% female and 12% male OHNPs. Botha (2016) who researched "Knowledge, Attitudes and Practices of Central Gauteng Occupational Health Nurse Practitioners related to Travel Health and Medicine" found similar results with 92% female and 8% male OHNPs. This research resulted in the OHNPs being predominantly female. This research had a highly similar gender output with Alberts (2015), Botha (2016) and on a larger scale SANC (2021).

Nursing is still perceived to be a woman's profession in many countries. 50% of the healthcare workforce are nurses and midwives, which is primarily a female-dominated profession and men only comprise a small percentage of the nursing workforce globally (Thompson, et al., 2020).

4.5.2 Age of Participants

According to the SANC's (2020) Age Analysis of Persons on the Register, 2021, the majority of Registered Nurses/Midwives Registered in the country are between the ages of 50-59 (27%); followed by 40-49 (26%); 30-39 (21%); less than 30 (6%), the oldest group of more than 69 years only comprised of 3% of the nursing population (South African Nursing Council, 2022). There are significant similarities and differences in comparison to these statistics as the majority of OHNPs in this research were between the ages of 50-59 followed

by 40-49; however, this research results showed that there were less OHNPs below the age of 40 and more over the age of 60 compared to the SANC statistics.

Huiskamp and Matingo (2014) conducted research on the perceptions of central Gauteng Occupational health nurses regarding their traditional and expanded roles, which showed their age distribution. 2% were between 20-29; 30% between 30-39; 46% between 40-49; 22% between 50-59; and 0% above 60 years. Due to this research being done ten years ago, the OHNPs have grown older, which deems the age distribution similar to what is presented in this research.

Alberts (2015) attributes the younger age in occupational health practice to the fact that once professional nurses have qualified, they are assigned to work in hospitals and clinics before continuing their education in the occupational health field.

An individual's age could be a predictor in how well they can cope with stress at work. In this research, OHNPs who were below the age of 40 experienced stress regarding demands, control, change, relationship and managerial support at work. Demands and managerial support at work were also a stressful experience for OHNPs who were over the age of 60 years.

4.5.3 Marital Status

Cañadas-De la Fuente et al. (2018) are of the opinion that gender, marital status, and children are predictors of burnout in nurses. It was found that being unmarried, namely single or divorced, nurses faced a higher risk of being distant or feeling indifferent towards work colleagues. Those who are married or have a family that provides security are protected from developing negative attitudes towards colleagues at the workplace. In this research, it was noted that being married or single contributed to being vulnerable to stress from their peers, and being single or divorced was a factor that contributed to facing stress from relationships at work.

No other studies on Occupational Health Nursing that incorporated marital status were found.

In this research study, OHNPs who were separated, widowed and single were experiencing more stress with relationships at work compared to married OHNPs. Managerial support at work caused the most stress to divorced OHNPs compared to the single, married and widowed OHNPs.

4.5.4 Highest Qualifications

The researcher was under the impression that all registered nurses who were members of SASOHN had an occupational health nursing qualification; however, according to Botha (2016), there are members of SASOHN who do not possess an occupational health nursing qualification.

The prerequisites to further one's studies in the occupational health nursing field requires one to have a general nursing qualification (Alberts, 2015). The Certificate in Occupational health was the only formal postgraduate qualification in the 1990s, which was later upgraded to a Diploma in 1993. Today, the occupational health qualification is available at postgraduate levels (Mutava, 2012).

The self-administered questionnaire in this research did not specify the highest occupational health nursing qualification, which may have led to confusion, In addition, the certificate in occupational health nursing was overlooked, and there were no other choices made available for the participants.

Due to the risk of inaccuracy, the results pertaining to education cannot be generalised to include all the OHNPs of Gauteng Province as they may not be accurate.

4.5.5 Duration of employment at current place of work

Professional nurses are only entering the occupational health sector at a later stage in their career due to having to further qualify in the discipline (Alberts, 2015). Research relating to OHNPs in South Africa, generally ask participants how long they have been in the discipline; however, for this research, it was of value to know how long the OHNP had been practicing in their current place of employment.

The retaining of valuable and talented employees is of crucial value to an organisation. The longer an employee spends in an organisation, the more familiar they get with regards to the nature of the organisation, the rules, guidelines and policies which make adjusting to change a more manageable process. A safe and healthy workplace stimulates an employee to continue in the organisation (Roy & Konwar, 2018).

This research shows that the majority of participants had less than 20 years of employment, with the median years being eight years with a range of 5-15 years. The minimum years of employment was one year, and the maximum years of employment was 39 years. One participant who was in the 56-60 year age group had 39 years in their current workplace. This may reflect good working conditions which stimulated them to stay with the organisation.

This research showed that OHNPs who had 20+ years working experience in their industry were experiencing stress with the demands at work, whilst OHNPs that had 5-10 years at their place of employment were experiencing the least amount of stress. Unsupportive management at work caused the most stress to OHNPs who had 5-10 years and 20+ years at their place of employment.

4.5.6 Industry of Employment

OHNPs are employed in diverse organisations, namely industrial sites, offices, factories, manufacturing (Ballard, 2016), food and beverage, hospitals/clinics, and wellness agencies (Huiskamp & Matingo, 2014).

Botha's (2016) research had similar values, with 12% of OHNPs working in the healthcare industry and 12% working in the mining industry, whilst in this research, 15% worked in the healthcare industry, and 10% in the mining industry. Whilst Botha's percentage of OHNPs working in engineering was 6%, in this study, it was 21%, possibly due to the fact that this research setting included all regions in Gauteng.

From this research, it became clear that OHNPs who were employed in the mining industry were experiencing stress regarding control at work. Furthermore, OHNPs working in the mining, engineering and transport industry, respectively, were experiencing stress regarding managerial support at work. OHNPs working in the engineering industry were experiencing stress with regards to change at work. OHNPs who were working in the education, chemical, transport or vehicle manufacturing industry experienced the most stress with demands at work, whilst OHNPs who worked in the corporate and mining industry were experiencing the least amount of stress with demands at work.

4.6 DISCUSSION OF RESULTS: DOMAINS OF WORK-RELATED STRESS

4.6.1 Demands

Demands relate to workload and work patterns (Wall, et al., 2021), including the demands of the environment (Wood, et al., 2019). In this study, OHNPs indicated that the demands placed on them were one of the significant stressors in their workplace. An increased workload with time constraints was identified as an aspect contributing to the challenges the OHNPs had experienced. This correlates with the study that was done by Nhlapo (2017) as the OHNPs working in the steel industry in the East Rand of Johannesburg indicated that their workload was too high with not enough time to complete their duties. These OHNPs were furthermore under pressure as they were expected to render occupational health services to many

employees which made it unmanageable to conduct site walkthroughs and inspections which added to their frustrations and stress.

The Royal College of Nursing (2015) conducted a survey in the United Kingdom (UK) regarding stress among nurses. The findings of this study are remarkably similar to the reported demands stress in the UK study, as they both indicated that high levels of work-related stress were found among their participants who were working long hours combined with unachievable deadlines and unrealistic time pressures.

Nissinen et al. (2020) conducted a study on the workload of occupational health nurses in Finland in which 63% of OHNPs felt overwhelmed because of excessive workload, time pressures and performing extra work that is not recognised as official working hours without getting paid time off or remuneration for those hours. High percentages of OHNPs in this research study reported having unachievable deadlines, unrealistic time pressures and were pressured into working long hours without being able to take sufficient breaks.

4.6.2 Control

Control covers the influence that an employee can exercise over how their work is done (Wood, et al., 2019). According to the results of this section in the questionnaire, there was a positive response from the OHNPs regarding control. High percentages were recorded per question, which shows that OHNPs are exercising a positive locus of control over their work. OHNPs in Gauteng Province reported that they had some say in how they did their work, including when to take a break and the speed at which they work; some had a choice in what they did at work and whether their working time was flexible.

Bani-Hani and Hamdan-Mansour (2021) conducted a study in Amman, Jordan, among nurses regarding the moderation effect of locus of control on the relationship between job demands and job satisfaction. It was reported that nurses with a high internal locus of control were able to manage high job demands and experience greater job satisfaction as a high internal locus of control had a buffering effect on job demand and stress.

In the results of this research study, the OHNPs were experiencing high demands, yet they were in a position of high control. According to Karasek's Job demand-control model, where there are positions that are both high in demands and control, this is termed active work (Lagrosen & Lagrosen, 2020).

4.6.3 Managerial Support

Managerial support incorporates the encouragement and resources provided to the employee by the employer, managers, and the organisation (Wood, et al., 2019). Results in this section revealed that there was a clear need for improvement with regard to managerial support.

When OHNPs in Albert's (2015) research were asked if they had plenty of time to discuss client care problems with their clients and operations manager, 60% disagreed with the statement. In this research, less than half of the OHNPs agreed that they were able to rely on their manager to help them with a work-related problem. Whilst 70% in Albert's (2015) research agreed that their operations manager would support them in making important decisions regarding their work, only half of the OHNPs in this research felt that they received encouragement from their managers and support about emotionally demanding work.
Rogers et al. (2014) reported that the types of managers that OHNPs report to in different companies were nurse managers, human resource management, environmental health and safety managers, followed by occupational health physicians. Although only half of the respondents reported that management was involved in occupational health clinic management. Nhlapo (2017) stated that the OHNP had too many managers to report to. OHNPs in the steel industry reported to the human resources manager, risk manager, and safety manager, and each of these managers had different expectations of the OHNP.

Rogers et al. (2014) are of the opinion that companies do not understand that good health equals good business and found that other disciplines in organisations were attempting to control nursing management as they viewed it as one dimensional and did not want nurses to be involved in decision making. In this study, it was found that OHNPs did not feel that their managers were reliable to help them with work-related problems and were not supportive of the work that the OHNP does for the organisation.

Nhlapo (2017) furthermore found that one of the major challenges was that management did not understand the role, the regulations for and the scope of practice of OHNPs. They felt that the clinic was only for giving medication before sending the worker back to their position, and interfered when the OHNP reported cases of occupational diseases and work-related injuries, as management was only concerned with cost-saving measures and did not want a high lost injury time as this would affect the company image.
Nhlapo (2017) conducted research on the challenges that were experienced by OHNPs in the East Rand Region of Gauteng. According to the results, it was evident that management, trade

unions and employees do not understand the OHNPs roles in the work environment. Management's lack of role clarification of the OHNP meant that the managers were overutilizing the OHNP, meaning they expected the OHNP to be able to "do everything and be everything to everyone" (Nhlapo, 2017:45), yet the OHNP was challenged by other roles that they were expected to complete including health education programmes, management of injuries, health screening and daily consultations with the ill employees, and when the OHNP was unable to fulfil these roles due to limited time constraints, the OHNP was viewed as underperforming.

Management who are more focused on productivity outcomes and who pay little attention to the grand scheme of things or the psychosocial dynamics within the team, are certainly going to hear employee complaints of malaise, irritability, and nervousness (Canadian Centre for Occupational Health and Safety, 2018). Effective and good leadership increases morale, job wellbeing, resilience, and trust, and decreases job frustration, role conflict, sick leave, and early retirement (Canadian Centre for Occupational Health and Safety, 2018). When employees have a perceived sense of managerial support, it is viewed as having support from the organisation as a whole (Agarwal, et al., 2020).

4.6.4 Peer Support

Peer Support includes the resources (Wall, et al., 2021), encouragement and support that is provided by colleagues (Wood, et al., 2019). Results from this section revealed that the OHNPs received the help, support and respect that they felt that they deserved from their colleagues and their colleagues were able to listen to them if they were experiencing work-related problems. Ballard (2016) reported that OHNPs frequently work in isolation and have the sole responsibility for overseeing the health of all employees. In this sense, it could be understood that OHNPs are the only frequent healthcare professionals and their colleagues could be viewed as individuals from other disciplines namely the occupational health physician, the human resources, safety or risk manager.

In Nhlapo's (2017) research, the OHNPs stated they didn't have anyone to speak to when they had a problem, as they were working in isolation. The OHNPs felt that their isolation was furthermore exacerbated if their clinic was outsourced by the organisation, which made them feel that they were not part of the workforce and that it would be better if the clinic were directly affiliated with the organisation as they would feel more valued.

De Sousa et al. (2019) consider social support as an important factor that minimises the adverse effects that health professionals experience in the workplace. Working in the healthcare environment requires teamwork; therefore, when support is perceived, it creates a sense of personal esteem, safety, and wellbeing. When employees feel a sense of good psychological support and protection from their co-workers and management, they have an increased job attachment, greater organisational commitment, satisfaction, and performance, improved emotional well-being, all of which increase employee morale and engagement (Canadian Centre for Occupational Health and Safety, 2018).

4.6.5 Relationships

The relationships at work section focus on the different social relationships that employees encounter (Wall, et al., 2021), the perceived interpersonal conflict at work (Wood, et al., 2019) and acceptable behaviours in the professional environment (Wall, et al., 2021). Whilst it was evident that the majority of OHNPs were not victims of workplace bullying, it was of concern that there were OHNPs who were facing personal harassment and bullying in the workplace. Bullying in the nursing workforce has been described as a silent epidemic in a study by Arnetz et al. (2019) in the United States on the organisational determinants of bullying and work disengagement of hospital nurses. Arnetz et al. (2019) identified that 37% of nurses had been bullied; of those, 20% had been bullied by another nurse, 10.9% by a physician and 10.3% by their immediate supervisor. This research showed that 28% of the OHNPs experienced bullying and 43% had been subjected to harassment, namely, unkind words or behaviours.

Vidal-Alves et al. (2021) conducted research in the South East of Spain on lateral violence that hospital nurses were experiencing, notably person-directed attacks and social isolation. The results of Vidal-Alves et al. (2021) study revealed that 59.2% were exposed to some type of violence at work, and of those experiencing violence, 51% were of personal nature as co-workers were spreading rumours about them, 37.3% of a social nature where their co-workers isolate them and stop speaking to them, and 21.3% of a work-related nature, where subjects were accused of making other people's mistakes. Vidal-Alves et al. (2021) furthermore identified demographic factors that led to a higher risk of lateral violence at work, namely those who were between the ages of 30-50, followed by those who were under 30. This is similar to this research as the OHNPs who were most stressed with regard to relationships were below the age of 50.

Homoyuni et al's (2021) research about victims of bullying in nursing staff in Bandar Abbas, Iran, found that there was a positive correlation between bullying and workload. This is similar to this research, where OHNPs who reported harassment or bullying were reporting instances of high demands, namely, having unrealistic time pressures and being unable to take sufficient breaks.

4.6.6 Role

Role encompasses the extent to which an employee understands their role in the overall organisation and how their role contributes to the organisation without any conflicting expectations (Wall, et al., 2021). Employees that know what their role is in the workplace were seen to be more confident and were able to assess and evaluate their work performance, so that they were able to initiate a positive influence on their colleagues and working environment, which in turn increased the productivity in the workplace; therefore the degree of influence that is portrayed is crucial in a workplace as it can predict the productivity level of employees (Ibrahim, et al., 2019).

The results reported in this study indicate that the OHNPs are excelling in their understanding of their roles in the workplace and how their goals and objectives in their departments contributed to the overall aims and goals of the organisation. OHNPs were clear about how to get their job done, they knew what was expected of them at work and were knowledgeable about their duties and responsibilities.

Rogers et al. (2014) indicated that occupational health nurses were most likely able to make independent decisions with regards to their own duties, worker health surveillance, and assessment programmes, namely counselling, referrals to physicians or other care providers, first aid, and the ability to conduct chronic health screening and monitor programmes, immunisations, and health statistics.

OHNPs work in a multitude of diverse organisations. They are viewed as leaders who take charge of coordination and integration of relevant health-promoting activities. This makes their role in a specific organisation dependent on the size and type of risks and hazards that are frequent according to the nature of the organisation that they work for (Michell, 2011).

4.6.7 Change

Change refers to when change processes are implemented in an organisation, how these changes are communicated to employees (Wood, et al., 2019), and how changes are safely processed to protect employee well-being (Wall, et al., 2021). Organisational change may include technological or managerial changes, downsizing, relocation, restructuring, a merger or a change in the number of job demands for employees (Harvey, et al., 2017).

The results of this section showed that there was a clear need for improvement, with the majority of OHNPs reporting a neutral or negative stance with regards to the change variable. The two statements that received the lowest positive statements were closely related to management, as less than half of the OHNPs had opportunities to consult their manager about changes at work, and a third of OHNPs disagreed that they were consulted about changes. Whilst one of the statements was closely related to role as when the OHNPs agreed that they understood how the changes at work would work out in practice, they also understood their roles in their departments in terms of their goals and objectives and what was expected of them.

Nissinen et al. (2020) reported that occupational nurses in Finland were affected negatively by change as it created a sense of feeling overloaded. In this study, there was a strong correlation that when changes were made at work, the OHNPs work demand increased with unachievable deadlines and unrealistic time pressures.

A third of the OHNPs who were younger than 40 years were vulnerable to stress with regard to change. Brown et al. (2018) stated that older nurses were able to cope with organisational changes; in addition, those with less than ten years of experience in their current work environment were likewise vulnerable. Brown et al. (2018) similarly stated that more experienced nurses were able to have more positive reactions to and were less resistant to organisational changes.

De Sousa et al. (2019) highlighted the dynamics in which the health system circulates - new rules are frequently being implemented, which makes the strategies health care professionals previously used to adapt to new changes redundant and ineffective, and this results in an increased strain, imbalance, and stress.

4.7 SUMMARY OF CHAPTER FOUR

This chapter presented the evidence that there is work-related stress amongst OHNPs in the Gauteng Province. The findings were conveyed in figures, tables, and descriptions, and a discussion was done concerning interrelated variables that contributed to the risk of experiencing work-related stress. OHNPs were most stressed with demands, relationships, managerial support, and change. OHNPs excelled in their roles at work and with the control of their work.

The following chapter summarises and concludes the research study whilst providing recommendations for further practice and research opportunities.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION OF THE RESEARCH STUDY

5.1 INTRODUCTION

This final chapter aims to summarise and provide recommendations for future occupational health practice, research opportunities and stress management. This chapter will furthermore discuss the limitations encountered and conclude the research study.

5.2 SUMMARY

The purpose of this research was to investigate the stress levels and factors that contribute to work-related stress among OHNPs in the Gauteng province.

This was achieved by the use of an online self-administered questionnaire sent via email to members of SASOHN via their respective regional chairpersons, which included biographical questions and used the Likert scale style HSE-MSIT questionnaire which incorporated work-related stress variables namely demands, control, role, managerial and peer support, relationships and change. A sample size of 105 was calculated, and this research yielded a 98% response rate with 103 questionnaires completed between April and August 2021.
The OHNPs who participated in this research study were predominantly female, had a mean age of 52 years, with the youngest being 28 and the oldest OHNP being 70 years. The majority of OHNPs held a Bachelor's degree followed by an Advanced Diploma and had been at their workplace for less than 20 years. Engineering, healthcare and mining industries were the most reported industries in which the OHNP participants were employed at.

To achieve the purpose of the research, the following research objectives needed to be determined:

Research objective one: To identify the work-related stress levels among OHNPs in the Gauteng Province.
The occupational health nursing practitioners who participated in this study reported having high levels of work demands, notably having unachievable deadlines and time pressures whilst being pressured into long working hours. OHNPs had good control over how they did their work, the way they did their work and were able to determine their own work speed whilst being able to take a break. This high perception of job control could have a moderating

effect on their high work demands. The OHNPs were very clear about their role at work and understood what was expected of them and what their duties were, including the goals and objectives of their departments and the overall organisation. OHNPs reported mixed results about managerial support and change; over half of the OHNPs felt that they were supported and encouraged by their manager and were clear about how changes at work would be put into practice, whilst a third of OHNPs were not able to rely on their manager with work-related problems, they did not receive any supportive feedback from their managers and were not consulted about changes at work, nor able to question managers about changes.
The majority of OHNPs reported that they received peer support, as they received respect, help and support from their colleagues and that their colleagues were available to listen when the OHNP was experiencing a work-related problem. A large group of OHNPs reported that they have never been bullied at work; approximately half reported that there was no anger, friction or strain amongst colleagues and that they were not subjected to any forms of harassment, although there were OHNPs who did report that they always or sometimes were bullied and were personally harassed at the workplace.

Research objective two: To describe the biographical and work-related factors which contribute to work-related stress among OHNPs in Gauteng Province.

To reflect on the biographical details that may contribute to work-related stress, this research was interested in age, marital status, industry and the OHNPs years of employment at work at the time of the data collection.
An OHNPs age may influence their work-related stress. In this research OHNPs who were below 40 and those who were above the age of 60 were experiencing work-related stress.
Marital status is also a factor that may play a role in work-related stress, namely, being single, widowed, divorced or separated.
Although the research study was not able to focus on a vast array of different industries of employment, OHNPs who work in the mining, engineering, transport, education, chemical and vehicle manufacturing fields were experiencing work-related stress.
The years of experience at the OHNPs current place of employment may impact work-related stress. The OHNPs who were experiencing the most work-related stress in some domains were those with 5-10 and more than 20 years of experience.

Research objective three: To determine the association between the work-related stress domains and biographical details of OHNPs in the Gauteng Province.

The work-related stress domains that this research focused on were demands, control, managerial support, peer support, relationships and change.

OHNPs work-related stress was predominantly related to work demands. With regards to age, there was an association between experiencing work-related stress and being less than 40 years of age or being above 60 years old. Widowed OHNPs and OHNPs who had more than 20 years of experience were more likely to experience stress because of work demands. OHNPs working in the education, chemical, construction and vehicle manufacturing fields had a high probability of experiencing work demand stress.

OHNPs had a high sense of control in their work environments, although OHNPs who were younger than 40 were experiencing work-related stress in this regard. OHNPs working in construction may be likely to experience work stress with regards to control.

A quarter of the OHNPs appeared to have work-related stress with regards to managerial support. OHNPs who are vulnerable to managerial stress are OHNPs who are below 40 and above 60 years of age, divorced OHNPs and OHNPs who had between 5-10 or more than 20 years of working experience. OHNPs working in the mining, engineering and transport industry were likely to experience work stress from managers.

OHNPs who may face work-related stress in terms of peer support and relationships at work may be the OHNPs who are under 50 years of age, single, separated, widowed, or divorced. Change at work may put pressure on those OHNPs who are below the age of 40, and the OHNPs who work in the engineering industry.

5.3 LIMITATIONS

According to Ross and Bibler Zaidi (2019), the limitations of a research study are an important element as it provides meaningful information on the restrictions the researcher encountered which may have influenced the outcomes of the research. Limitations include the scope and the methodology of the research. Limitations are generally understood as where there are possible restrictions to the validity of a research study that may affect the generalisability of the research findings (Gray, et al., 2017).

This research study was limited by:

- The research study was only done in one province of South Africa. Thus, these findings from our sample may not be generalisable to the larger population of OHNPs.
- The educational level of this research sample was not clear, and this may have added value in the interpretation of the results.

5.4 RECOMMENDATIONS

The following recommendations are based on the research findings and the limitations identified

5.4.1 Recommendations for future research

- It was evident from the literature review that there is a large gap in the knowledge with regards to work-related stress in occupational health nursing, specifically. Further research is recommended in other provinces in the Republic of South Africa, in Africa and internationally.
- The development of a work-related stress questionnaire designed specifically for the OHNP to investigate the demands placed on OHNPs in more depth, would cover aspects of their specific roles and clinic environment, including how many clients they attend to, what occupational related risks and hazards are specific to their clients' environment and the health surveillance programmes they implement.
- A qualitative research study on the work-related stress of OHNPs would be beneficial as it would include more detailed descriptions of stressors which would be valuable in further interventions needed to mitigate the stressors.

5.4.2 Recommendations for Occupational Health Nursing

- It is recommended that OHNPs consider resilience, mindfulness, and work-life balance training as it is important in the maintenance of good mental health, as the OHNPs were stressed with regards to the demands placed on them at work.

5.5 CONCLUSION

What are the stress levels and factors that contribute to work-related stress among occupational health nurse practitioners in the Gauteng Province who are members of SASOHN?

OHNPs are experiencing a high workload, with low managerial support and are not being involved with changes when they are implemented in the workplace. The OHNPs are excelling in their control over their work and in their roles and functions. More than half of OHNPs have support from their colleagues; however, more than half are reporting strained relationships at their workplaces.

The researcher believes that this research will help OHNPs become aware of their work-related stress, their strengths and weaknesses and be able to identify aspects of their work that require interventions.

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APPENDIX A

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Miss Stephanie Leila McAlinden

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M201193

NAME: (Principal Investigator)	Miss Stephanie Leila McAlinden
DEPARTMENT:	Nursing Education Gauteng
PROJECT TITLE:	Work-related stress amongst Occupational Health Nurse Practitioners in Gauteng Province
DATE CONSIDERED:	27/11/2020
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Miss A.A Huiskamp
APPROVED BY:	CB Penny Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	12/03/2021

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions.Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. I **agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **November** and will therefore be due in the month of **November** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX B

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

03 January 2022
Person No: 0609356T
PAG

Miss SL McAlinden
52 Appletree Lane
54 Third Road
Northwold
2155
South Africa

Dear Miss Stephanie McAlinden

Master of Science in Nursing: Approval of Title

We have pleasure in advising that your proposal entitled *Work-related stress among Occupational Health Nurse Practitioners in Gauteng Province* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

APPENDIX C

UNIVERSITY OF THE
WITWATERSRAND
JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

15 April 2021

Dear South African Society of Occupational Health Nursing Practitioners National Executive Committee,

My name is Stephanie McAlinden, and I am a master's student in Occupational Health Nursing student at the University of the Witwatersrand, conducting research on the work-related stress amongst Occupational Health Nurse Practitioners in Gauteng Province. This research study is part of my academic requirement to obtain my MSc in Nursing.

Research is a process conducted to answer research questions. In this study I want to seek information about the levels of work-related stress in the Occupational Health Nurse Practitioners. Nursing is known to be a stressful profession as it is evident in the literature. However, there are few studies available that describe the stressors in the Occupational Health Service and Nursing.

My Research Objectives are as follows:
To identify the work-related stress levels in OHNP's in the Gauteng Province.
To describe the sociodemographic and work-related factors that contribute to work-related stress in OHNP's in Gauteng Province.
To determine whether a relationship exists between variables from the Sociodemographic questionnaire and the Health and Safety Executive Management Standards Indicator Tool results.

I would like to ask your permission to conduct my research on the Occupational Health Nursing Practitioners within the Gauteng Province, being Gauteng Central Region; Pretoria Region; West Rand Region and the Vaal Region. A sample of at least 105 OHNPs will be needed to achieve results with a 5% margin error and 95% confidence level.

The research instrument that will be utilised is the Health and Safety Executive management Standards Indicator tool which will be accessed via a link to a secure data collection platform. I would like to request assistance from a committee member in circulating my research to all the OHNP's via their email addresses and via the SASOHN Collaboration Group Chat. I would communicate with a respective member in sending out weekly reminders to the research study until I have achieved my sample.

The participation in this study is voluntary and the OHNP's can decide to withdraw from participating at any time without any penalty. Only the researcher, supervisor and statistician will have sole access to raw data and all data collected will be kept in a secured password protected folder. Confidentiality and anonymity will be maintained as the survey does not ask for any identifiable information such as names, email addresses, telephone numbers, identity numbers or company name. The data will be kept safely in the Department of Nursing and will be destroyed after 5 years. There will be no direct benefit to the participants, but the findings of the study will be made available to you once it is complete.

This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg Protocol number: M201193.

Your consideration and attention in this matter is greatly appreciated.
Should you require any more information to make an informative decision please feel free to contact myself or my supervisor Agnes Huiskamp at agnes.huiskamp@wits.ac.za

Kind Regards
Stephanie Leila McAlinden
0721194936
0609356t@students.wits.ac.za

APPENDIX D

SASOHN
SOUTH AFRICAN SOCIETY OF OCCUPATIONAL HEALTH NURSING PRACTITIONERS
Registered Public Benefit Organisation (Reg no 857107915)

20 April 2021

Ms Stephanie McAlinden

Student Number: 0609356T

Faculty of Health Sciences

University of Witwatersrand

Email: 0609356t@students.wits.ac.za

Dear Ms McAlinden

RE: REQUEST FOR ACCESS TO SASOHN DATABASE FOR RESEARCH PURPOSES

Thank you for submitting a copy of your proposal and Ethics Clearance certificate from the University of Witwatersrand. I am pleased to be able to offer you access to the *SASOHN Gauteng Central, Pretoria, West rand and Vaal regions* chairpersons details in order for you to contact members in their regions. I would request that you agree to the following conditions:

- A letter from the ethics committee giving approval for the study is to be provided to SASOHN.
- The information is handled in a confidential manner and will not be used for any purpose other than to collect data for your research.
- No contact information that was shared will be made available or given to any other person.
- The information will only be used for this project titled; *Work- related stress among Occupational Health nurse practitioners in Gauteng Province*, and no other.
- All returned questionnaires are to be sent directly to you and not to the SASOHN office. This is to ensure confidentiality.
- The research results will be written up in a report format and submitted to the SASOHN EXCO for distribution.
- SASOHN would appreciate it if a report or an article could be written for the OHSA journal for distribution to its members.

Please could you sign this letter as an acknowledgement of the conditions we can make the information available. We wish you luck with your study and trust you will enjoy the academic process.

SASOHN National Office:
P O Box 26538, East Rand, 1462
Tel: +27 (0)861 SASOHN [+27(0)861 727 646]
Fax:+27 (0)86 263 8757
Email: office@sasohn.co.za

SASOHN
SOUTH AFRICAN SOCIETY OF OCCUPATIONAL HEALTH NURSING PRACTITIONERS
Registered Public Benefit Organisation (Reg no 8571079153)

Kind Regards



Ms M Bester

National Educational Representative

SASOHN National Office:
P O Box 26538, East Rand, 1462
Tel: +27 (0)861 SASOHN [+27(0)861 727 646]
Fax:+27 (0)86 263 8757
Email: office@sasohn.co.za

APPENDIX E

WORK-RELATED STRESS AMONGST OCCUPATIONAL HEALTH NURSE PRACTITIONERS IN GAUTENG PROVINCE.

INFORMATION LEAFLET

Dear Occupational Health Nurse Practitioner,

My name is Stephanie McAlinden, and I am a master's student in Occupational Health Nursing student at the University of the Witwatersrand, conducting research on the work-related stress amongst Occupational Health Nurse Practitioners in Gauteng Province. This research study is part of my academic requirement to obtain my MSc in Nursing.

Research is a process conducted to answer research questions. In this study I want to seek information about the levels of work-related stress in the Occupational Health Nurse Practitioners. Nursing is known to be a stressful profession as it is evident in the literature. However, there are few studies available that describe the stressors in the Occupational Health Service and Nursing.

I hereby invite you to participate in this research study.
To participate in the study, you are invited to complete a questionnaire on stressful work-related events. The questionnaire will take about 10-15 minutes to complete. Completion of the questionnaire will be seen as informed consent.
Your participation in this study is voluntary and you can decide to withdraw from participating at any time without any penalty. Only the researcher, supervisor and statistician will have sole access to raw data and all data collected will be kept in a secured password protected folder. Confidentiality and anonymity will be maintained as the survey does not ask for any identifiable information such as names, email addresses, telephone numbers, identity numbers or company name. The data will be kept safely in the Department of Nursing and will be destroyed after 5 years. There will be no direct benefit to you, but the findings of the study will be made available to you once it is complete.

This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg ("Committee"). A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research. If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717-2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717-2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za. You may contact my study supervisor

Agnes Huiskamp at the University of the Witwatersrand at agnes.huiskamp@wits.ac.za if you have any questions.

Thank you for your willingness to participate in the study.
Stephanie McAlinden: 0609356t@students.wits.ac.za

APPENDIX F

Data Collection Instrument
Biographical Questionnaire

Please complete your biographical information by marking the appropriate block with an "X"

Which SASOHN region are you affiliated with?

Gauteng Central		Pretoria		Vaal		West Rand	

Gender

Female	Male

Age

Marital Status

Single		Married	
Widowed		Divorced	
Separated		Living with Partner	

Highest Education Level

Diploma in Nursing	Bachelor's Degree	Advanced Diploma	Master's Degree	PhD
Year of Qualification				

Duration of employment at current place of work:

Type of Industry:

Hospital with OHS		Specialized Service-Defence/SAPS		Specialized Service-Emergency/EMS-Fire brigade	
Municipality-Traffic, Parks, Tourism, Waste management		Water/Sewage/Waste services		Transport Industry-Aviation/railway/bus	
Vehicle Manufacturing		Textile Manufacturing		Food Manufacturing	
Furniture Manufacturing		Food Industry-Hospitality/Beverages/ Abattoir		Agricultural/Horticultural-Plant, animal, poultry, fishery, forestry	
Construction- Brick making/tile making/cement/buildings/road		Mining Industry-Gold/Diamonds/Coal/ other		Engineering	
Pharmaceutical Industry		Chemical/Paint Industry		Corporate- Office/Travel Clinic	
Education		Healthcare			

APPENDIX G

Data Collection Instrument

The Health and Safety Executive Management Standards Indicator Tool

Instructions: It is recognised that working conditions can affect Occupational Health Nurse Practitioners well-being. Your responses to the questions below will help determine the working conditions now. In order to compare the current situation, it is important that your responses reflect your work in the last six months.

		Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work					
2	I can decide when to take a break					
3	Different groups at work demand things from me that are hard to combine					
4	I know how to go about getting my job done					
5	I am subject to personal harassment in the form of unkind words or behaviour					
6	I have unachievable deadlines					
7	If work gets difficult, my colleagues will help me					
8	I am given supportive feedback on the work I do					
9	I have to work very intensively					
10	I have a say in my own work speed					
11	I am clear what my duties and responsibilities are					
12	I have to neglect some tasks because I have too much to do					
13	I am clear about the goals and objectives for my department					
14	There is friction or anger between colleagues					
15	I have a choice in deciding how I do my work					
16	I am unable to take sufficient breaks					
17	I understand how my work fits into the overall aim of the organisation					
18	I am pressured to work long hours					
19	I have a choice in deciding what I do at work					
20	I have to work very fast					
21	I am subject to bullying at work					
22	I have unrealistic time pressures					
23	I can rely on my manager to help me out with a work problem					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
24	I get help and support I need from colleagues					
25	I have some say over the way I work					
26	I have sufficient opportunities to question managers about change at work					
27	I receive the respect at work I deserve from my colleagues					
28	Staff are always consulted about change at work					
29	I can talk to my manager about something that has upset or annoyed me about work					
30	My working time can be flexible					
31	My colleagues are willing to listen to my work-related problems					
32	When changes are made at work, I am clear how they will work out in practice					
33	I am supported through emotionally demanding work					
34	Relationships at work are strained					
35	My manager encourages me at work					